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Excavation at Fengate, Peterborough, England: The Second Report

Francis Pryor

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The Second Report



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Cover photo: The large pit W17 and ring-ditch during excavation.

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To Amy

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Foreword

Recent developments have caused the original publication plan, as laid out in *Excavation at Fengate, Peterborough, England: The First Report* (FNG 1:1) to be modified. First, the Peterborough Development Corporation now intend to develop all the "reserved land" east of Storey's Bar Road (Fig. 3). Second, the scheduled ancient monument of Fengate has been considerably enlarged, mainly as a result of the 1973 excavations, and it now comprises an extra 75 acres along the Fen-edge east of Storey's Bar Road. Parts of this new area will have to be excavated. Third, excavations in 1974 and 1975 (Pryor 1976) have shown that the Bronze Age field system first investigated in 1971 (FNG 1:fig. 1, ditches 1-15) is far more extensive and complex than had been previously thought. It was therefore decided, in view of the unexpectedly increased size and complexity of the site, not to attempt annual reports devoted to diverse subjects.

The revised publication plan takes into account natural geographical and chronological divisions of the site. *The Second Report*, then, completes the discussion of Neolithic and Early Bronze Age remains, begun in *The First Report*, from subsites west of Storey's Bar Road (FNG 1:fig. 2). *The Third Report*, currently being prepared, will consider Bronze Age finds and features west of Storey's Bar Road. Finally, *The Fourth Report* will cover all remaining Iron Age and Roman material. These divisions cannot, because of the nature of the site, be absolute, but we hope that the new publication scheme will keep cross-references to a minimum.

Acknowledgements

I am particularly indebted to those who have contributed special reports to this volume: to Miss M. Harman, for her report on the animal bones; to Dr. C. Wells, for his report on the human skeletons; to Mr. R. Bradley, for his reinterpretation of Playden; to Mr. J. R. B. Arthur, for his report on the macro-botanical remains; to Dr. M. D. Hooper for pH tests and botanical advice; to Miss R. A. Jones, for identifying the wood; to Dr. J. H. McAndrews, for the pollen analysis; and to Dr. R. Tringham and Miss B. Voytek, for the flint microwear study. Thanks are also due to Dr. D. G. Coombs, Dr. I. A. Kinnes, and Dr. I. F. Smith for continued advice and criticism, and to Dr. A. D. Tushingham, Chief Archaeologist, the Royal Ontario Museum, for constant help and encouragement.

It would not have been possible to organize the excavations without the generous assistance of the Earl and Countess Fitzwilliam. I am also most indebted to the following members of the Nene Valley Research Committee for assistance both practical and theoretical: Dr. G. Webster, Mr. D. F.

Mackreth, Mr. A. Challands, Mr. G. B. Dannell, Mr. J. May, Mr. E. Standen, Dr. J. P. Wild, and Mr. G. E. Dixon. Special thanks are owed to Mr. G. E. Dixon, who, in addition to his duties as N.V.R.C. Treasurer, also managed the Fengate accounts — in both sterling and dollars.

I am also most indebted to Mr. G. W. Simpson for plans of the site, drawings of the pottery, and for time spent discussing the Welland valley excavations.

In the field the finds were processed by Miss Anne Boyle. I am grateful to the following, who supervised various aspects of the work: Miss Nancy Allerston, Mr. Dermot Bond, Mr. David Cranstone, Mr. Boyd Dixon, Mr. Andrew Ignatieff, Mr. Robert Johnstone, Miss Nathalie MacFarlane, Mr. Richard Raumann, Miss Catrien van Waarden, and Mrs. Joan Wilson.

The flint and pottery drawings are by Mrs. Jirina Hosek, and Mr. David Findlay helped prepare some of the plans for publication. The flints were measured by Miss Nancy Allerston and Mrs. Mima Kapches.

The excavations are funded by the Royal Ontario Museum, with supplementary grants from the Devonian Foundation of Calgary, Alberta (seasons 1971–74) and the British Department of the Environment (seasons 1971–72, 1974–76).

Permanent storage and display of the finds will be arranged at the conclusion of the project.

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Terminology, conventions, and abbreviations

The linear measurements are given in the metric system (wherever possible) and metres are used as the basic unit. In the running text the metre abbreviation (m) is used, but in the catalogues of pottery sherds and flints it is omitted.

Throughout this report radiocarbon dates are given using the "Libby" half-life for radiocarbon (5,568 years), correct to one standard deviation. Dates in "radiocarbon years" are indicated by the use of the letters "ad" and "bc" to distinguish them from calendar years A.D. and B.C.

The depths of finds in this report are given below the stripped surface (in metres), that is about 0.75 m below the modern ground level (the problem is discussed in Appendix 1). Similarly, sections are drawn with the original ploughsoil removed, but with the stripped surface level indicated in metres above Ordnance Datum. It was thought undesirable to "reconstruct" the modern soil profile after it had been removed mechanically.

The representation of soil types used in this report follows the standard scheme introduced in 1972 by D. F. Mackreth, Nene Valley Research Committee Director of Excavations. A few minor modifications, however, have been introduced; the conventions used here are illustrated and explained in Fig. 17 and 27.

Introduction

Abstract

This report is principally concerned with a Late Neolithic/Bronze Age Fen-margin settlement and its stock enclosures. Four phases of occupation are defined, starting ca 2000 bc. A large assemblage of Grooved Ware and associated flints is described. The differential distribution of finds and features suggests a tentative reconstruction of activity areas within the settlement. The Bronze Age phases of the settlement are related to the sequence of events surrounding the deposition of a Collared Urn cremation and the associated erection of a barrow. An attempt is made to interpret local Fen palaeoenvironments, and aspects of the Late Neolithic/Bronze Age economy are discussed.

This report considers the excavation of Neolithic sites west of Storey's Bar Road. Previous excavations in the area are described in *The First Report* (FNG 1:29–31), but it should be noted that the original finds of Neolithic Peterborough tradition pottery were made in the Gravel Pits Settlement Area (Fig. 3).

The geology and gross stratigraphy of the region are described below. Chapter 1 completes the discussion of material from the earlier Neolithic house described in *The First Report* (FNG 1:6–13), but the main body of the report is devoted to a discussion of a Late Neolithic/Bronze Age settlement excavated in 1973 and 1974.

The features that provide the archaeological evidence for this settlement are considered in Chapter 2 and the finds are described and discussed in Chapters 3 to 5. Finally, Chapters 6 and 7 attempt to reconstruct aspects of ancient life in and around the settlement during its various phases.

General Topography of the Area

The site lies at the interface of two distinct, but complementary, ecological zones, namely, the Fens and the Lower Nene valley (Fig. 1).

Since the geology of the Peterborough area has recently been studied in depth (Horton et al. 1974), only a brief account will be given here. To the east of the site lie the Flandrian deposits of the Fenlands, which formed in a natural, impermeable dip of the underlying Jurassic clays. Irregularities of the Jurassic substratum protrude as Fen "islands", many of which were capped by glacial boulder clays. The standard account of Fenland geology is still that of Skertchly (1877) who defined and mapped the Peat and Silt Fens which together comprise the Fenland. The Peat or "Black" Fens are a

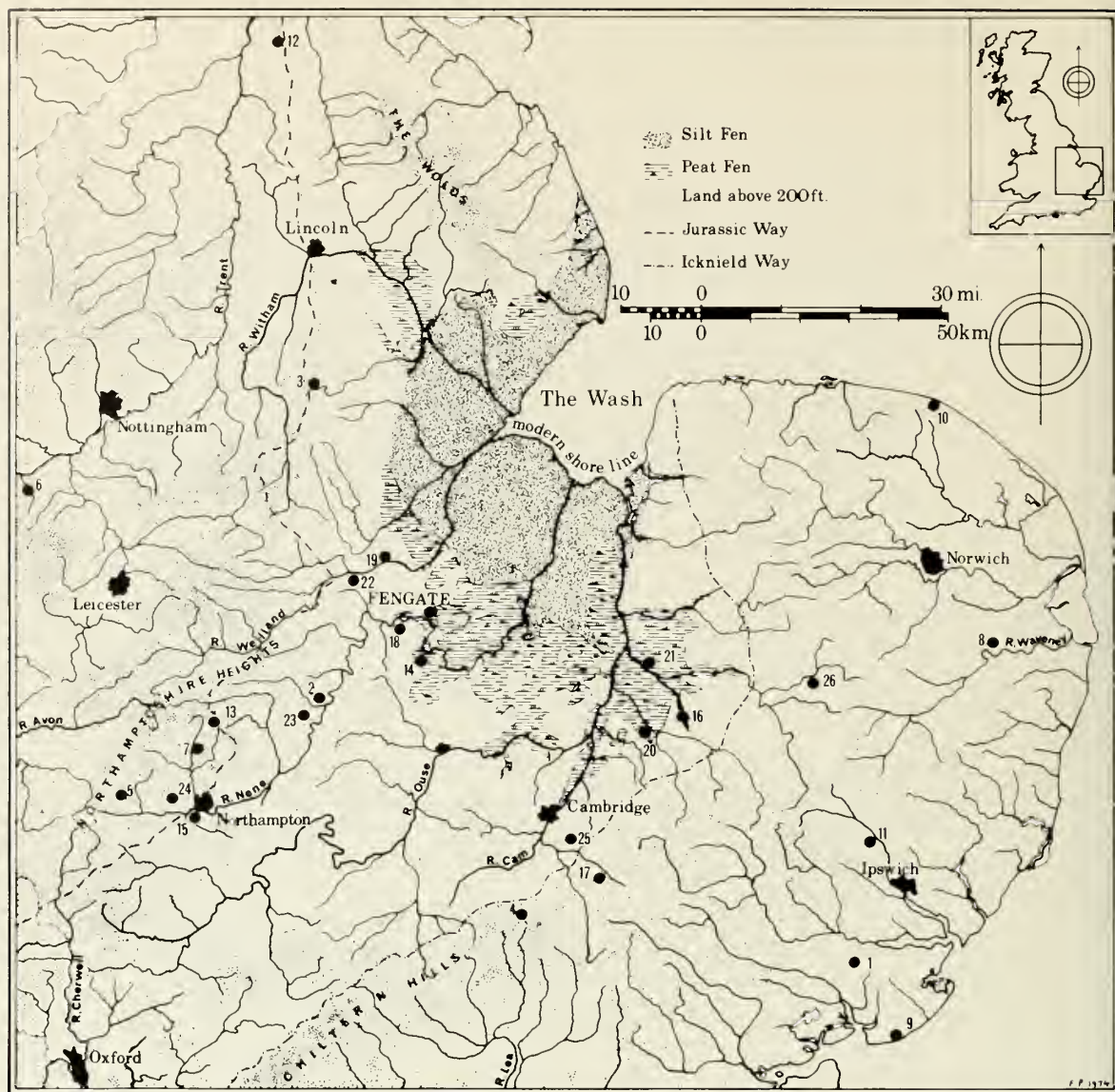


Fig. 1 Topographical map showing the site's setting in eastern and east-central England. Numbers refer to principal archaeological sites mentioned in this and *The First Report*. 1 Ardleigh; 2 Aldwinckle; 3 Ancaster; 4 Barley; 5 Borough Hill; 6 Breedon-on-the-Hill; 7 Brixworth; 8 Broome Heath; 9 Clacton; 10 Cromer; 11 Darnsden; 12 Dragonby; 13 Draughton; 14 Holme Fen; 15 Hunsbury; 16 Hurst Fen; 17 Linton; 18 Lynch Farm; 19 Maxey; 20 Mildenhall; 21 Peacock's Farm; 22 Pilsgate; 23 Twywell; 24 Upton; 25 Wandlebury; 26 West Harling.

landward phenomenon of the southern and western Fenland. The Silt Fen and Marshland, nearer the sea, occur in a wide band around the Wash and westward into southern Lincolnshire. These silts formed as a result of marine transgressions which appear to have begun between 1300 and 300 bc (Churchill 1970). The peats, which underlie the silts to the east, formed at various times in various areas. It is clear, however, that peat formation had begun in the Holme-Yaxley basin, 10 km south of Fengate about 6000 bp (Godwin and Vishnu-Mittre 1975:600). The growth of peat in the Middle and South Levels was interrupted by the deposition of the Fen ("Buttery") Clay and Silts. This episode, or episodes, reached its greatest extent ca 2500 bc (Willis 1961:375) and there is some evidence that its effects were more prolonged in the Holme-Yaxley area than in the South Levels (Godwin and Vishnu-Mittre 1975:600). The precise nature of the Fen Clay and Silt in our area is not yet clear, but it must be ultimately of marine or semi-marine origin (Godwin and Clifford 1938:387). A boring at Dog-in-a-Doublet sluice, 6 km east of the site, and the tidal limit of the modern Nene, revealed about one and a half metres of Fen Clay separating an Upper from a Lower Peat (Godwin and Clifford 1938:fig. 27). It is doubtful, however, whether the Fen Clay would have extended as far west as Fengate.

Little is known about the original, natural course or courses of the Nene east of Peterborough. Its modern course is artificial, as is that of its southerly predecessor, Morton's Leam. The river marked on maps as the Nene (Old Course), although almost certainly following a straightened natural path in the Whittlesey and Trundle Mere region, is too southerly to be an original course of the modern river (Godwin and Clifford 1938: 377). Similarly, the Cat's Water, which enters the Fens at Fengate, possibly follows a natural path as it skirts the site. Its course northward, however, between Thorney and Eye, cannot be natural. Many of these points may require substantial modification following recent research by Dr. R. Evans of the Soil Survey, Cambridge.

The Fen Margin, upon which the site is situated, consists of a low, but discernible, rise in the First Terrace Gravels (Horton et al. 1974:55 and fig. 12). The upper layers of gravel are composed of medium pebbles with varying amounts of sand and silt. Below about 0.45 metres the gravels are more uniform in texture and colour, which is noticeably paler. There are no pockets of silt or sand, although large, bedded layers of clean sand may be encountered. The gravels are uniformly capped by about 0.75 metres of topsoil, which is discussed in Appendices 1 and 2.

To the west, the Vicarage Farm subsite impinges on an outcrop of the Upper Jurassic Cornbrash Limestone, which in turn overlies the Blisworth Clay (FNG 1:pl. 4 shows an Early Iron Age pit cut through the Cornbrash into the impermeable Blisworth Clay beneath). The gently rising ground "inland" from Peterborough is composed of a variety of Upper Jurassic deposits (Horton et al. 1974:fig. 2 and 3), through which the Nene valley cuts in a north-northeast-south-southwest direction. The Middle Nene valley contains deposits of the Second and Third Terrace Gravels, and in its upper reaches, west of Northampton, the river cuts through the hills of the Jurassic Ridge.

The Site

Fengate is located on a band of gravel that skirts the western edge of the Peat Fen, along the "landward" side of the Cat's Water (Fig. 2 and 3). An approximate centre point of the site, as it survives today, is at TL 213989. The Fens lie to the east, with many "islands" and "peninsulas", such as Whittlesey, Thorney, Horsey, and Eye, all within easy reach of the site. The site itself, insofar as its limits can be defined, appears to be concentrated mainly on the higher ground of the Fen Margins, very roughly between the 10- and 25-foot contours.

Further inland, the low-lying country traversed by the east-west valleys of the rivers Witham, Welland, Nene, and Ouse would have allowed communication north and south, while the valleys themselves would have given easy access to the uplands of the Jurassic Ridge (the Northamptonshire Heights, etc.) and, ultimately, to the valleys of the Upper Thames basin. In short, communication north, south, and west would have been quite straightforward. However, at various periods in their history, the Fens would have been impassable, especially during the wetter months of the year. Communication, therefore, with East Anglia and perhaps even with eastern Lincolnshire would have been difficult at times (cf. FNG 1:36-37).

The discoveries of G. Wyman Abbott (FNG 1:29-31), together with modern aerial photographs, show that the site was occupied for most later

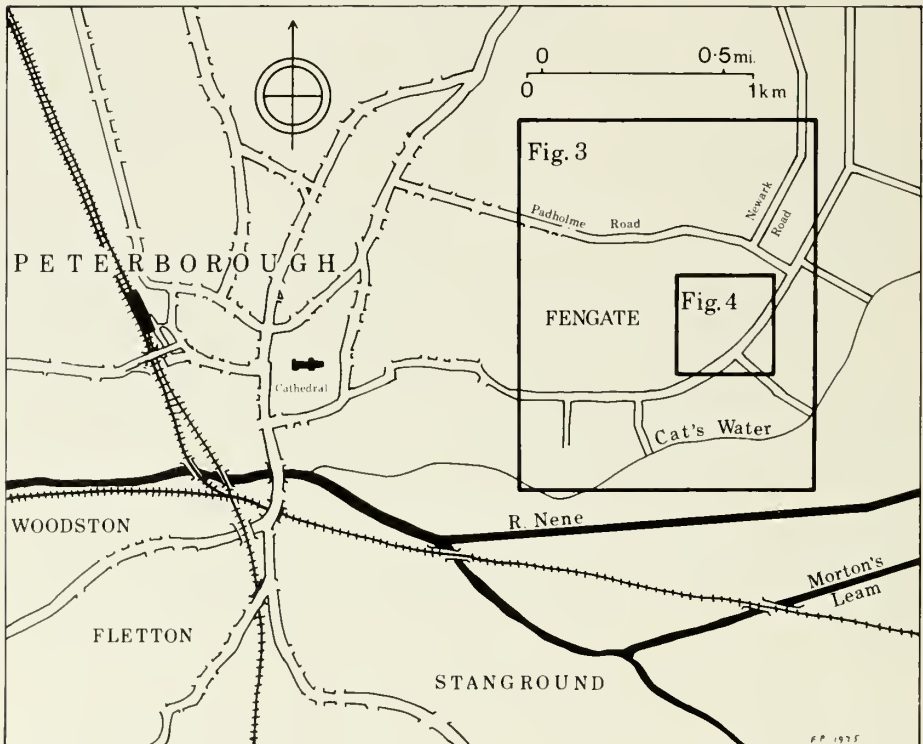


Fig. 2 Location map for Fig. 3 and 4.

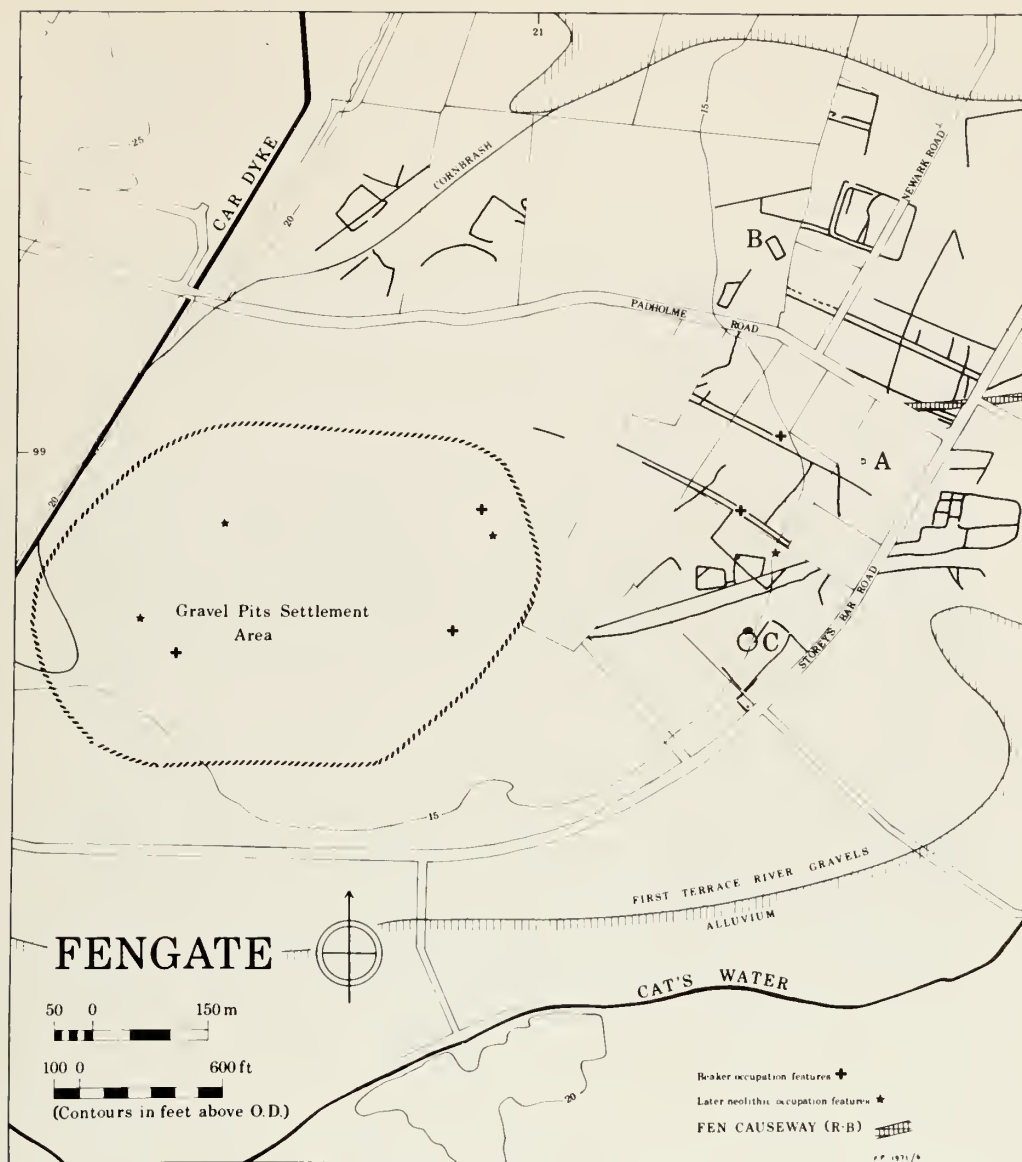


Fig. 3 General plan of the Fengate cropmarks. This is an updated version of the plan published in *The First Report*, fig. 1, which omits supposed archaeological features, since proved by excavation to be of natural origin. The "Gravel Pits Settlement Area" was the location of the original Peterborough finds of Mr. G. Wyman Abbott and findspots within it should be treated with caution. Post-war Neolithic discoveries are shown thus: A, the earlier Neolithic house (cf. FNG 1:6-13); B, the pre-Beaker enclosure excavated by Miss Mahany (1969); C, the Late Neolithic/Bronze Age settlement of this report.

prehistoric periods. The area chosen for ancient occupation appears to have been constrained by the Fens to the east and by the heavy clay soils to the west. If the natural inducements of the site are such that most later prehistoric periods are indeed fairly represented, and if the observed geographical constraints are indeed valid, then Fengate provides a rare opportunity to investigate prehistoric settlement patterns and economic development within a well-defined area.

The Fens could at various times have provided man with fish, wildfowl, peat, reeds, timber, withies, hay, and grazing. In addition, light gravel soils and other flood-free agricultural land were always available along the Fen Margins and up the Nene valley. A settlement, such as Fengate, located between these two zones, could exploit both, either simultaneously or at different times of the year.

Clearly the size of an excavated sample within such an archaeologically well-defined site is of importance if generalizations about the past within that area are to have any validity. A few trial trenches would be both useless and misleading; alternatively it would be impractical to strip the whole site. We have therefore compromised by stripping about 5 per cent of the total site (10 per cent of the threatened site). Given such large areas cleared, negative evidence, as we shall see, becomes of more than usual importance.

So far we have found that the study of settlement patterns divides naturally into three levels of analysis, all of which interrelate. This report is principally concerned with the finest level — the study of *intra-community* settlement patterns. The next, more general, level of analysis is concerned with the variations of settlement types and their distribution through space and time over the site as a whole. This is termed the *micro*-level of analysis. The third, or *macro*-level, is concerned with the changing relationship of the site and its various communities to the surrounding region (Chang 1968:7).

The expansion of Greater Peterborough provides an opportunity to put these concepts to the test. All land destined for development is bought by the Peterborough Development Corporation, who allow time to investigate the large areas required and who have taken pains to defer factory building until the archaeological work has been completed.

Chapter 1

Earlier Neolithic

The First Report carried an account of an earlier Neolithic house found in the Padholme Road subsite, Area XIII (FNG 1:6–8). It consisted of four trenches forming a rough rectangle measuring 7.0 m × 8.5 m, together with a few small pits and associated post-holes. The dating depends on two radiocarbon dates of 3010 ± 64 bc (GaK-4196) and 2445 ± 50 bc (GaK-4197). We may assume that the earlier of these two dates derives from residual charcoal. Pottery found in the trenches belongs to Dr. I. F. Smith's Grimston/Lyles Hill tradition, which on current radiocarbon dates spans a period of more than 1,000 years. The house cannot, therefore, be precisely dated. Nonetheless, structures of this period are very rare in lowland England, and so it was thought necessary to offer additional information to that provided in *The First Report*. We are principally concerned here with burnt clay "daub" and flint irregular workshop waste.

Burnt Clay

The First Report (FNG 1:8) made passing reference to 143 g of burnt clay "daub", a material which is often taken to indicate the use of wattle and daub walls. Its occurrence and composition therefore merit detailed consideration. The sample from feature F59 (the southwest post-hole) weighs 17 g, that from F55a weighs 108 g, and that from F51 weighs 18 g (FNG 1:fig. 5 shows the location of these features).

These pieces of daub were found only in the house foundation trenches or post-holes. No wattle impressions could be discerned, but the "firing" shows much variation. Some pieces are quite hard, others extremely soft; colour too is uneven and some pieces show signs of scorching. No temper appears to have been added, but the clay used is of a higher quality than that found in the topsoil locally. It would therefore seem probable that, unlike the "daub" found in the Late Neolithic feature P59 (p. 58), the clay from the earlier Neolithic house was deliberately selected, perhaps for some specific purpose. The source is as yet unclear, but the clay chosen is of fair quality with few large natural inclusions.

Flint

Additional data to that provided in *The First Report* is required so that the earlier Neolithic flint industry may be compared with that described in Chapter 4.

Tables 1 to 3 give the length, breadth, and thickness measurements of the

unbroken waste and utilized flint flakes described in *The First Report* (FNG 1:fig. 9).

Irregular workshop waste provides evidence for flint knapping on the site. It is rough material that could not be classified in any other way and may be compared with Coles' (1971:302) "bashed lumps". More than 80 per cent, by weight, of this waste is of light brown, slightly granular flint of poor quality, and almost certainly originates from local gravel sources; the remaining 20 per cent is of higher quality black flint, some of which may have originated from outside the site.

Eight pieces show signs of heating. The possibility of heat pre-treatment (to improve knapping quality), although rarely recognizable on finished implements, should be considered, since overheated pieces may well have been discarded along with other by-products (Crabtree 1972:5, with references). Complete, or slight, calcination may also be the result of simple domestic causes.

Table 4 lists various attributes of the irregular workshop waste, and an attempt has been made to define the degree of cortex cover found. The system used is similar to that described below for flakes. Since, however, workshop waste has no obvious dorsal or ventral aspects, primary pieces are defined as those whose surface area is more than half cortical. Secondary pieces are less than half cortical, and tertiary pieces are wholly non-cortical. Although the criteria used are not, strictly speaking, comparable, and the numbers of workshop waste pieces are slight, flakes show a tendency to be less cortical than workshop waste (cf. FNG 1:fig. 9 and Table 4 of this report). There is no evidence that primary flakes were detached in a deliberate attempt to remove the cortex from potential cores. Rather, the evidence suggests that possible cores of local gravel were simply bashed to determine the quality of the flint. Pebbles with internal structural weakness (and these are common in the local gravels) would have been rejected as irregular workshop waste.

Only one piece of irregular workshop waste showed signs of retouch or use; this example carried steep scraper retouch along a short length of one edge.

The total flint assemblage (275 flints) from the earlier Neolithic house may be summarized thus:

IMPLEMENTS (46.2% OF TOTAL)

	No.	% of total	Illustrated examples
Scrapers, short-end			
(type A [iii])	6	2.2	(FNG 1:fig. 7:3-4, 25-27)
Fragment of (?) laurel	1	0.4	(FNG 1:fig. 7:24)
Sickle, single piece	1	0.4	(FNG 1:fig. 8:3)
Sickle, composite, piece of	1	0.4	(FNG 1:fig. 8:4)
Flakes, serrated	2	0.7	(FNG 1:fig. 7:14, 23)
Flake, retouched	1	0.4	(FNG 1:fig. 8:2)
Flakes, utilized	114	41.4	(FNG 1:fig. 8:1)
Workshop waste, retouched	1	0.4	

Table 1 Lengths (mm) of the unbroken flakes from the earlier Neolithic features, Padholme Road subsite, Area XIII

	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	Total	%
Utilized		2	16	28	20	8	3	4	81	47.37
Non-utilized	1	23	37	17	7	5			90	52.63
									171	

Table 2 Breadths (mm) of the unbroken flakes from the earlier Neolithic features, Padholme Road subsite, Area XIII

	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	Total
Utilized		8	17	20	21	6	6	1	2	81
Non-utilized		11	23	29	13	8	3	2	1	90

Table 3 Thicknesses (mm) of the unbroken flakes from the earlier Neolithic features, Padholme Road subsite, Area XIII

	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	Total
Utilized	6	30	25	12	7			1				81
Non-utilized	20	36	15	9	4	4	1				1	90

BY-PRODUCTS (53.8% OF TOTAL)

	No.	% of total
Waste flakes	109	39.6
Irregular workshop waste	39	14.1

Table 4 Irregular workshop waste from the earlier Neolithic features, Padholme Road subsite, Area XIII

	Weight (g)	No. of pieces	Average weight (g)	% of total weight
Primary	21.1	1	21.0	7.6
Secondary	219.8	23	9.5	76.8
Tertiary	44.6	16	2.8	15.6
Totals	285.5	40	7.1	

Jet

It should be pointed out that the drawing of the jet bead and Dr. Smith’s reconstruction of it in *The First Report* (FNG 1:fig. 8:6 and 23) are based on an accurate traced outline made before the damage to the left-hand collar took place.

Chapter 2

Late Neolithic/Bronze Age Features

Methodology and Nomenclature

The features described in this chapter were excavated in the seasons of 1973 and 1974. All were located within the Storey's Bar Road subsite, Areas I and IV (Fig. 4).

The Grid

The original intention in the 1973 season was to investigate the ring-ditch and the area immediately around it. A metre grid was laid out with a false origin some 80 metres south of the ring-ditch (Fig. 6). It became apparent, however, that a much larger area should be exposed and in the course of this enlargement, towards the end of the 1973 season, the false origin was incorporated within the excavation. Despite this, all but two of the features (Fig. 32:B24 and B40) lie north and west of the grid origin. With the exception, therefore, of the two features just mentioned, all grid references are given in the form x/y in which x represents metres (grid) west and y metres (grid) north of the origin. References thus refer to the southeast corner of each metre square of the grid.

For various reasons, not the least being the problem of communication over distances, we decided to subdivide Area I into smaller units. These units were termed "quadrants" and are distinguished by colour codes. The original four quadrants of 1973 centre on the grid reference 35/60, with W (white) to the north, R (red) to the east, B (blue) to the south, and Y (yellow) to the west (Fig. 6). In 1974 Area I was extended northeast and southwest. The southwest extension, which proved to be sterile, was termed the G (green) quadrant. The large northeastern extension was divided along the 1973 30 m-west line into two quadrants, N (natural) to the northeast and P (purple) to the southwest; the P quadrant also included Area V (Fig. 5).

Quadrant, feature, and layer codes were assigned in the field. The numbering of features (pits, ditches, etc.) proceeded independently in each quadrant, so that each feature number is invariably preceded by its quadrant letter. Layer numbers refer to the stratigraphic sequence of deposits within each feature and are significant only within individual features. Layer numbers were assigned from the surface downward and are placed after the feature number. Layer numbers are encircled on the artifacts themselves and in the site records.

The term feature as used here describes any disturbance of the natural subsoil that could reasonably be attributed to the activity of man. The term is

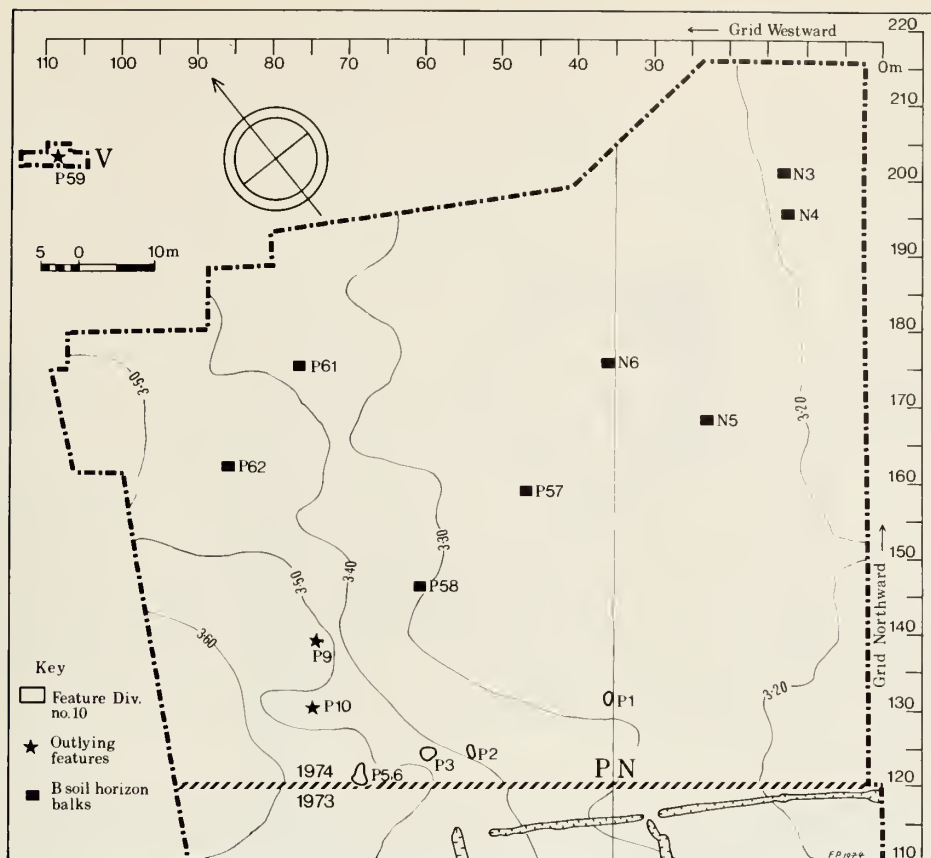


Fig. 4 Storey's Bar Road subsite, location of excavated areas.

also applied to possibly natural hollows in the subsoil that have become filled with archaeological material. In some cases it was difficult to determine whether a feature was made or filled in by man. In these cases the feature is described as being "(?) natural".

While excavation was in progress it was apparent that the features of the settlement were not homogeneous and could be grouped into a number of often well-defined categories. The criteria chosen to define these categories (referred to in this report as Feature Divisions) were many, and, it must be admitted, were in part intuitively selected. The principal criteria for differentiating the divisions were spatial: contiguity, proximity, or continuity. Thus it seemed reasonable to group together, for example, the rectilinear arrangement of ditches belonging to Division 1. Other criteria used include similarity of plan and profile morphology, filling texture and colour, artifact state and composition, and bone state and composition. The features comprising Divisions 1 to 8 have at least four of these points in common.

Single large features that could not readily be placed within an existing



Feature Division were assigned Feature Division numbers of their own, as, for example, Feature Divisions 2 to 5. Smaller features that could not be placed in any obvious Feature Division were placed in Divisions 9 and 10.

The system of Feature Divisions is fundamental to the analysis of the settlement as presented in this report. It allows the site to be divided into integral units, which may be recombined in various ways in the future. Obviously, flexibility of interpretation is essential when considering a long-lived settlement whose various phases are not as clear-cut as might be desired.

In order to avoid repetition, features are here described in groups, which in most cases are the appropriate Feature Divisions. The location and dimensions, filling, and stratigraphy (if present) of each feature appear separately. This is followed by a more general description. Finally, the description of certain small features also includes a brief list of the artifacts found in them. This applies only to those instances in which the finds from the relevant Feature Division have been treated as a whole in Chapters 3 and 4.

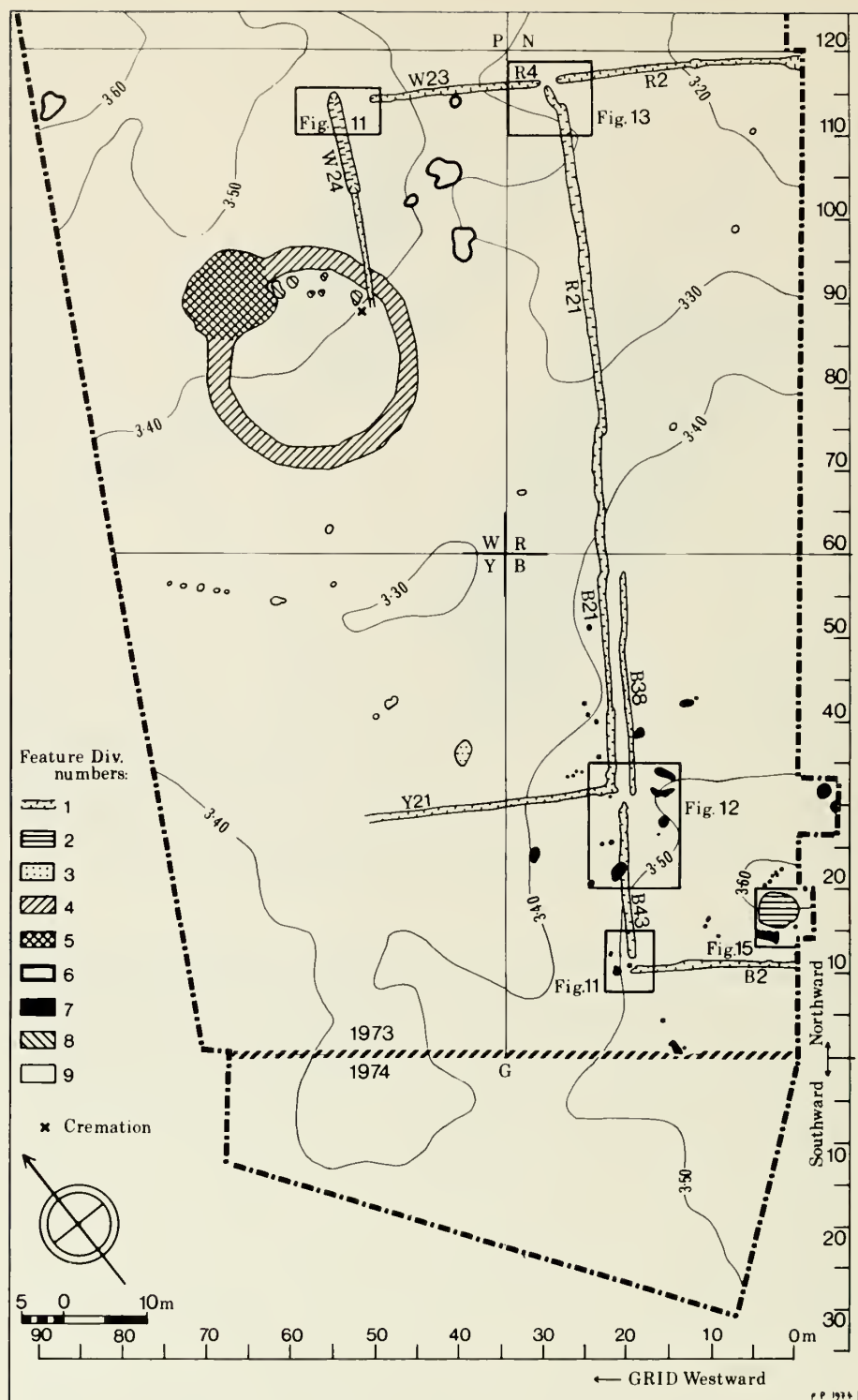


Fig. 6 Storey's Bar Road sub-site, Area I, centre and SE: plan of Late Neolithic and Bronze Age features. (Contours in metres O.D. after removal of topsoil.)

The Features (Fig. 6)

Feature Division 1: B2, B38, B43, Y21, B21, R21, R2, R4, W23, W24

- B2 Ditch aligned NW-SE, running out of the excavation to SE; L. 19.8; W. 1.1-0.6; D. 0.38-0.25.
- B38 Ditch aligned NE-SW, totally excavated; L. 26.8; W. 0.5 ± 3 cm; D. 0.10-0.06.
- B43 Ditch aligned NE-SW, totally excavated; L. 18.8; W. 1.05-0.75; D. 0.35 ± 3 cm.
- Y21 A continuation of the NW-SE portion of ditch B21, not traceable to W. Dimensions are for Y21 and B21 (NW-SE only: Fig. 8: sections 8-11). L. 31.0; W. 0.75-0.6; D. 0.32-0.14.
- B21 The principal NE-SW ditch, totally excavated; L. 85.0;
and R21 W. 1.36-0.50; D. 0.51-0.10.
- R2 Ditch aligned NW-SE running out of the excavation to SE; L. 29.2; W. 1.63-0.88; D. 0.96-0.41.
- R4 Ditch aligned NW-SE, totally excavated; L. 20.4; W. 1.09-0.90;
and W23 D. 0.40-0.34.
- W24 Ditch aligned NE-SW, not traceable to SW; cutting through the ring-ditch filling; L. 26.2; W. 1.55-0.57; D. 0.61-0.26.

In general, the filling of the ditches formed one homogeneous layer of sand-silt with occasional gravel pebbles (Fig. 7, 8, 9, and 10). The only exception was the extreme northeast corner of B2 (Fig. 9: section 27), where the ditch became suddenly much deeper and wider. At this point two layers were observed, an initial "rapid" silt of sand and gravel, below homogeneous sand-silt with occasional gravel pebbles.

The linear ditches of this division (Fig. 6) enclose, or partly enclose, at least two sub-rectangular areas, one to the southeast and one to the northwest. The northeast and southeast ditches of the larger, southeast enclosure (ditches R2 and B2) could not be followed southeast because of disturbance caused by the construction in 1972 of a sewer main. It would seem very probable, however, that they continue under Storey's Bar Road.

Perhaps the most remarkable feature of the ditch system was the absence of completely ditched right-angled corners. Every corner, as originally laid out, was marked by gaps in the ditches, which had been blocked, in some cases, at a later date. We shall discuss these gaps in greater detail below.

Ditch Y21 became impossible to trace approximately half-way across the Y quadrant where the natural subsoil was traversed by sand and silt washes. The extreme dryness of the 1973 season added to the difficulties encountered. However, with the exception of features Y21 (northwest) and W24 (southwest), the ditch endings were clear and distinct.

Ditch B2 ran northwest-southeast at right angles to the southeast end of ditch B43, but with a gap of 1.20 m between the corners of the two ditches

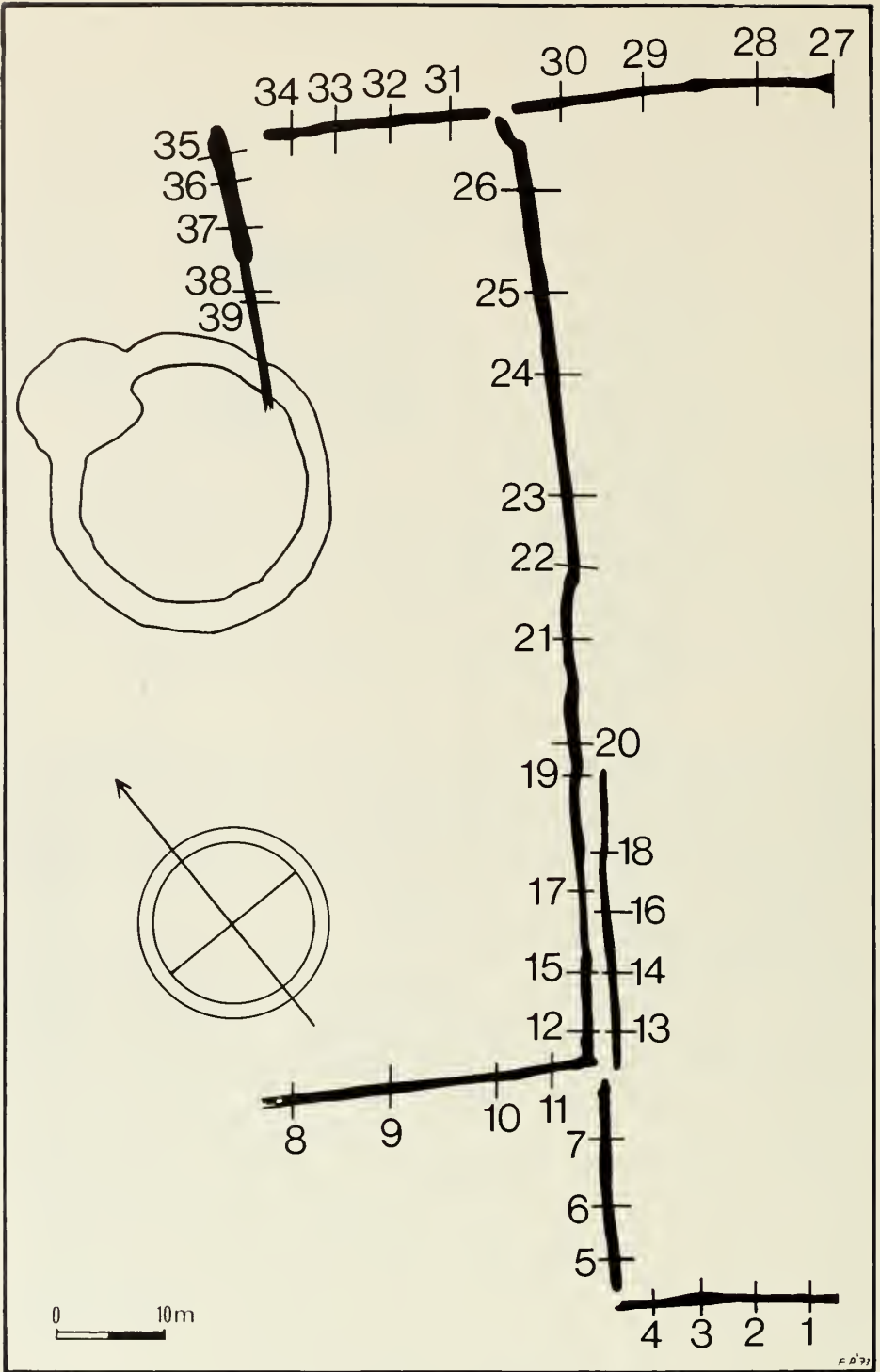


Fig. 7 Storey's Bar Road subsite, Area I, Feature Division 1: location of sections illustrated in Fig. 8, 9, and 10.

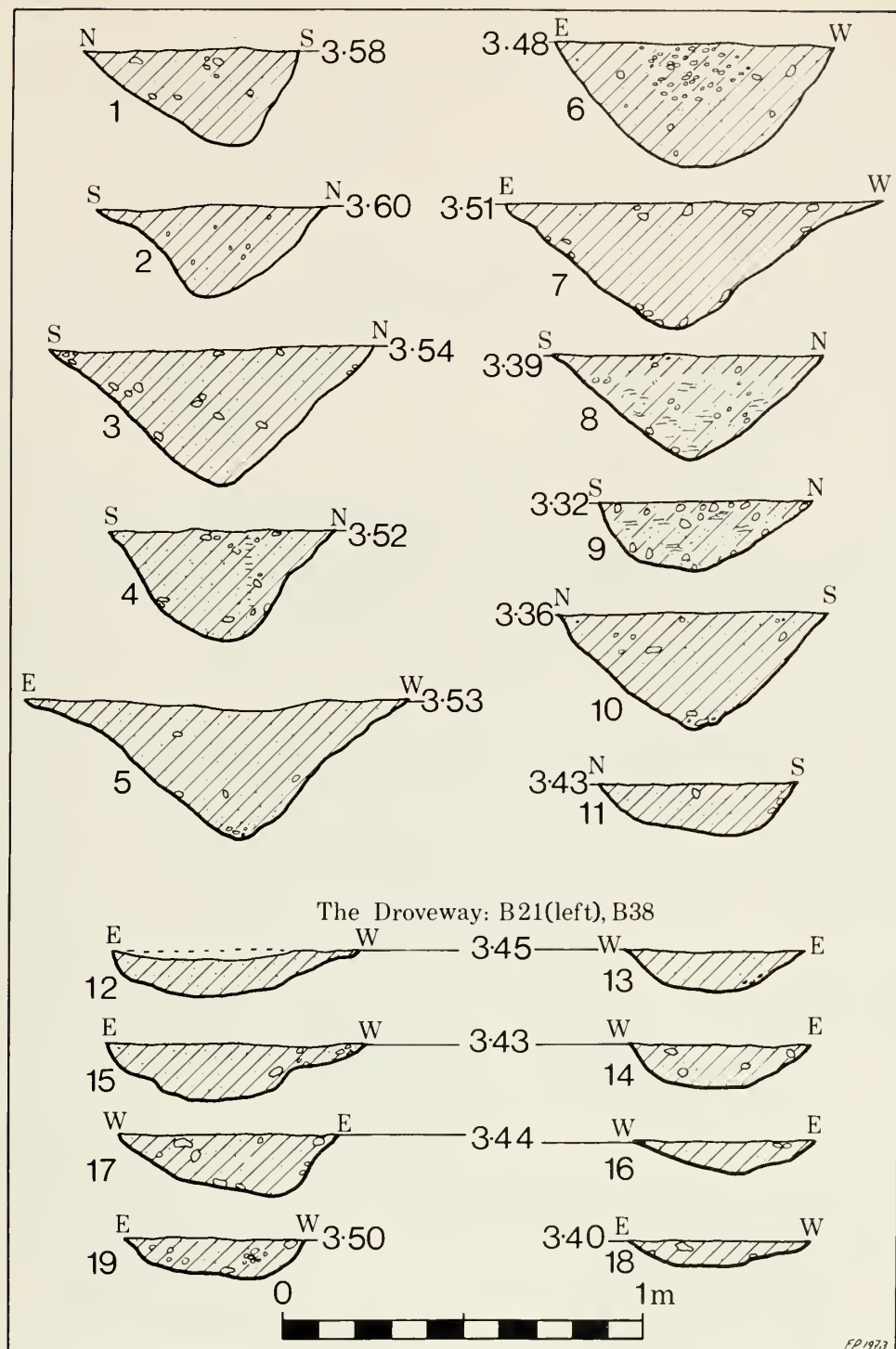


Fig. 8 Storey's Bar Road subsite, Area I, Feature Division 1: sections 1-19. For location of sections see Fig. 7. Surface levels in metres O.D.

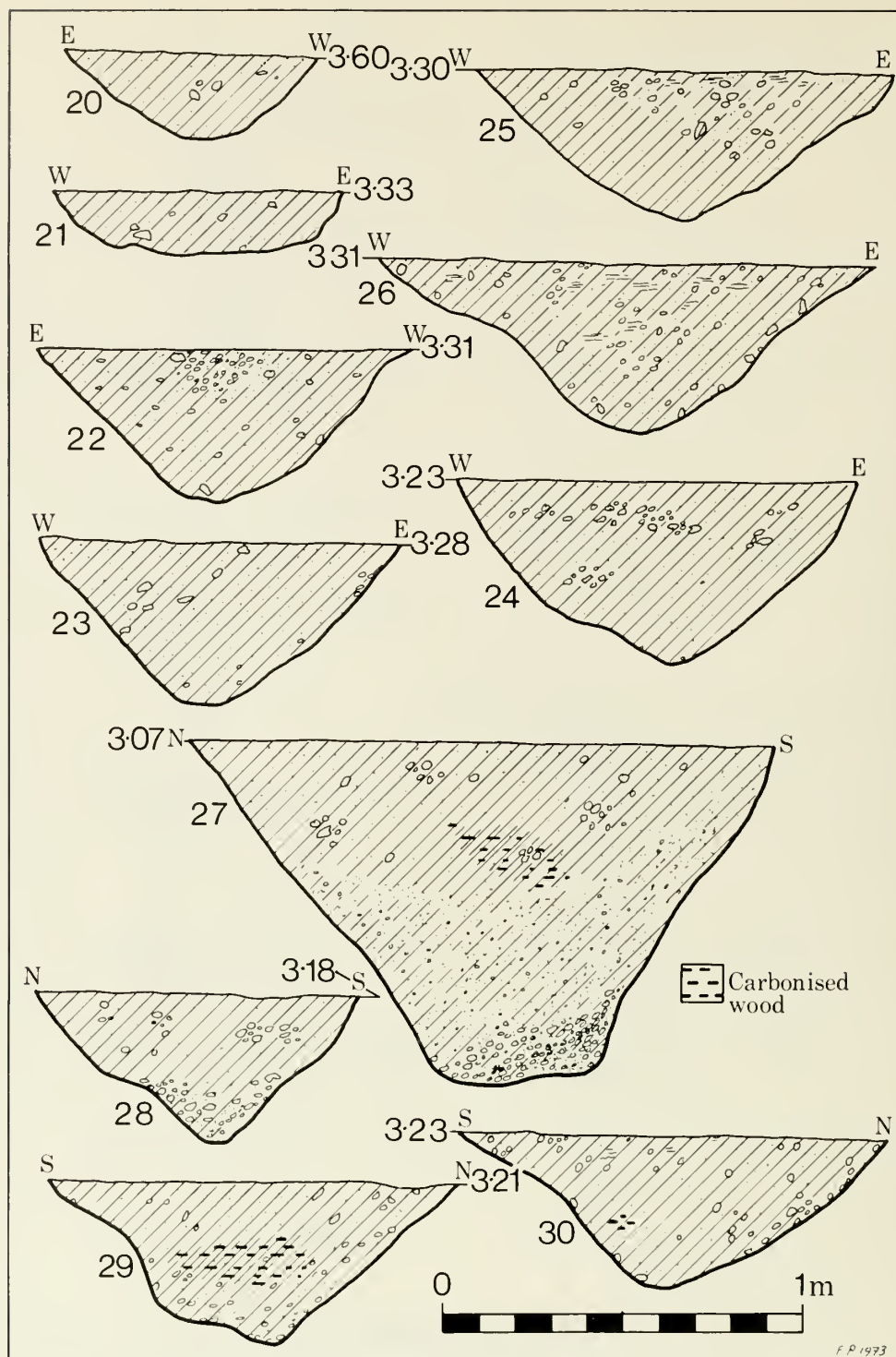


Fig. 9 Storey's Bar Road sub-site, Area I, Feature Division 1: sections 20-30. For location of sections see Fig. 7. Surface levels in metres O.D.

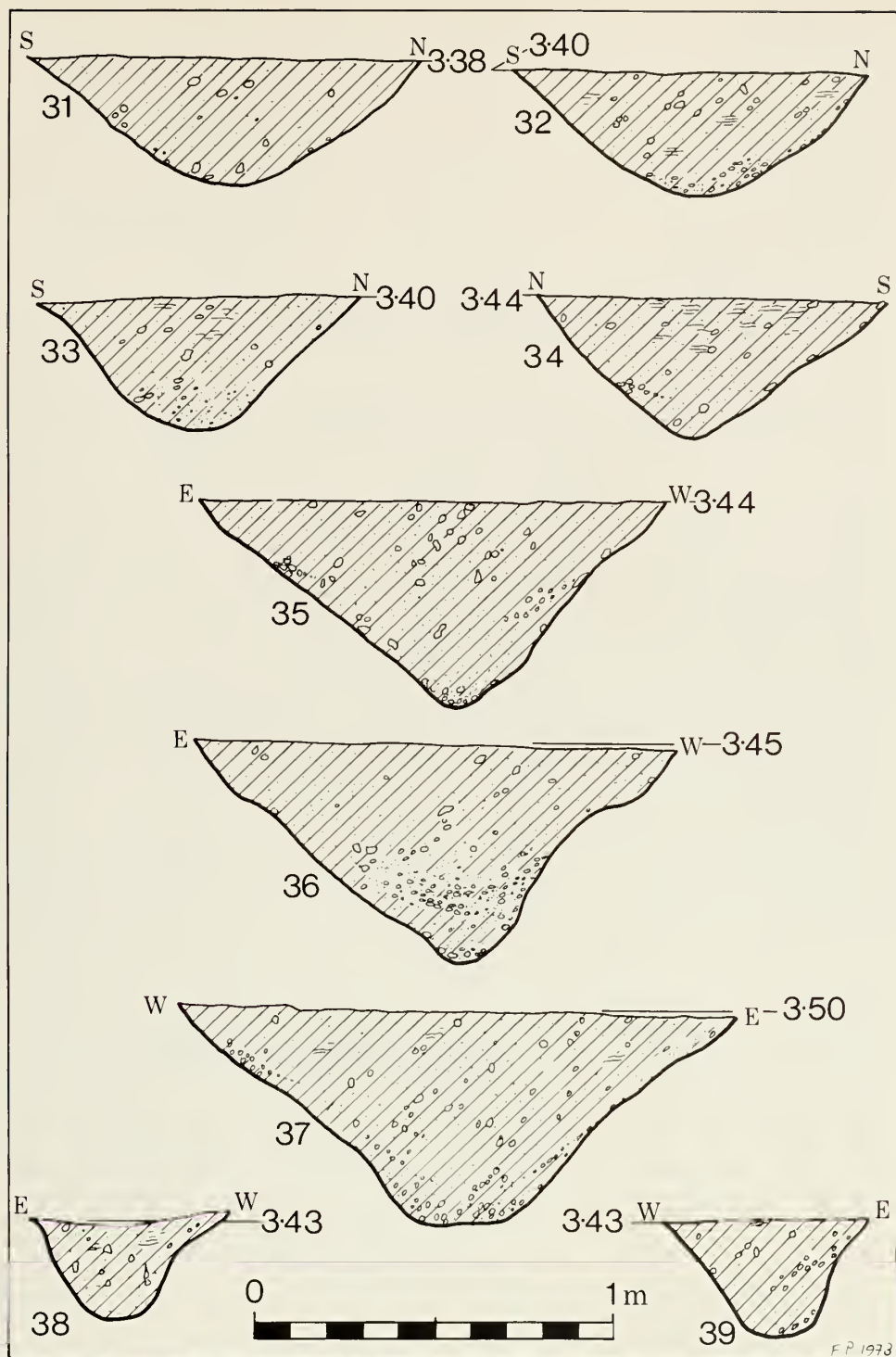


Fig. 10 Storey's Bar Road sub-site, Area I, Feature Division 1: sections 31-39. For location of sections see Fig. 7. Surface levels in metres O.D.

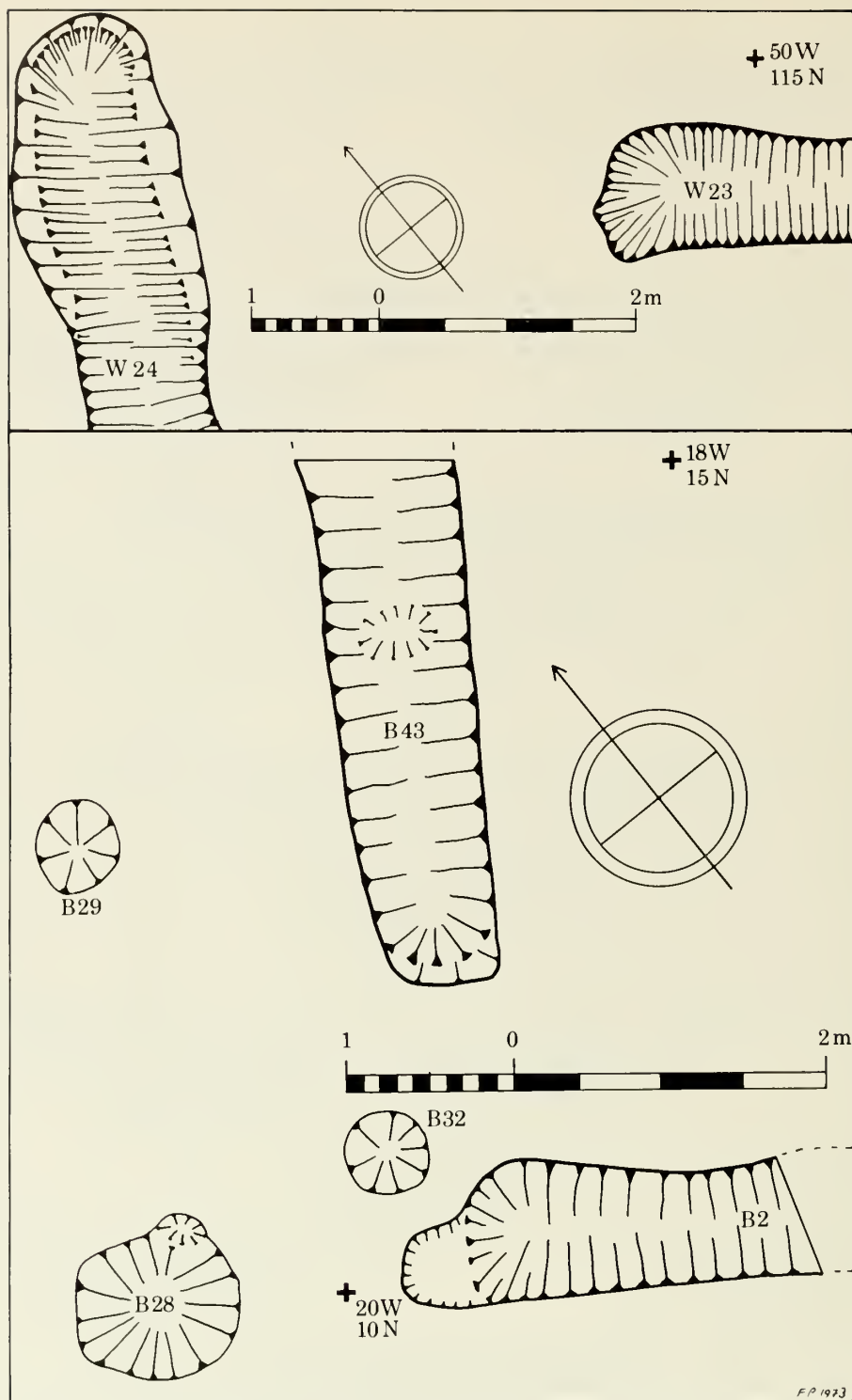


Fig. 11 Storey's Bar Road sub-site, Area I, gap between ditches W24 and W23 (upper); gap between ditches B43 and B2 (lower). For location see Fig. 6.

(Fig. 11). The filling in the ditches consisted of sand-silt (Munsell 10YR 3/4) with gravel pebbles and charcoal flecks (Fig. 8:sections 1–4).

Ditch B43 ran northeast-southwest, with its northeast end located 0.50 m southwest of the centre point of the area between ditches B21 and B38 (Fig. 12). It was similar in profile to B2, but was slightly wider and deeper. Despite this slight increase in size, B43 had a lower density of finds than B2 (Fig. 14). The density of finds decreased as the paired ditches B38 and B21 were approached, a phenomenon that could be attributed to B43's diminishing gradually in size to the northeast (Fig. 8: compare the size difference of sections 5 and 12). The filling consisted of sand-silt with occasional gravel pebbles and intermittent gravel lenses. The average Munsell colour was 10YR 3/3 (Fig. 8:sections 5–7).

The small pit B50 (Fig. 12 and 33) was filled with homogeneous sand-silt similar to that of B43. The stratigraphic relationship of the two features was therefore not clear at the point where they intersected, although the sharp increase in the density of finds in the ditch might suggest that the pit was later.

Ditch Y21 was once a separate feature. It was joined to the northeast-southwest section of B21 by a short length of deeper ditch with a rounded, heel-like southeasterly extension (Fig. 12). This deeper ditch, 3 m long, and between 5 cm and 10 cm deeper than the northeast-southwest lengths of ditches Y21 and B21, can be deduced to have blocked a gap originally about one and a half metres wide, similar to other corner gaps found on the site. The more southerly portions of B21 were in general shallower and slacker in profile than features B2 and B43 (Fig. 7, 8, and 9:sections 12–21). North of section 21, however, ditch R21 increased in depth and width and the marked "kink" evident on the plan suggests that the ditch had either been heavily recut or else extended northeast in a separate operation (Fig. 6). The 40 metres of ditch northeast of the "kink" are considerably straighter and deeper than the sections to the southwest, an observation that applies to the northwest ditches in general. A longitudinal section through the filling of the ditch at the "kink", dug to determine if the feature had been recut, was unfortunately inconclusive.

The northeast end of ditch R21 was located slightly northwest of midway between features R2 and R4 (Fig. 13 and Pl. 3). Although the longitudinal section was inconclusive, it is evident from the plan that ditch R21 originally terminated 2.4 m southwest of the northwest end of R2, to leave a corner gap aligned northeast-southwest. The increased density of the finds (Fig. 14) northeast of section 21 could in part be explained by R21's greatly enlarged breadth and depth. The filling was of uniform sand-silt with gravel pebbles, iron-pan, and occasional charcoal flecks. Munsell colours varied, but were generally similar to those of B2 and B43.

The northwest-southeast ditch R2 ran parallel to ditch B2, but it was deeper and wider and its filling showed traces of two layers (compare Fig. 8:sections 1–4 with Fig. 9:sections 28–30). The interface of the upper layer (sand-silt, Munsell 10YR 4/3) and lower layer (sand-silt with sand and gravel lenses, Munsell 10YR 5/4) was marked by a concentration of charcoal flecks and a few fire-cracked gravel pebbles. This darker horizon could be traced

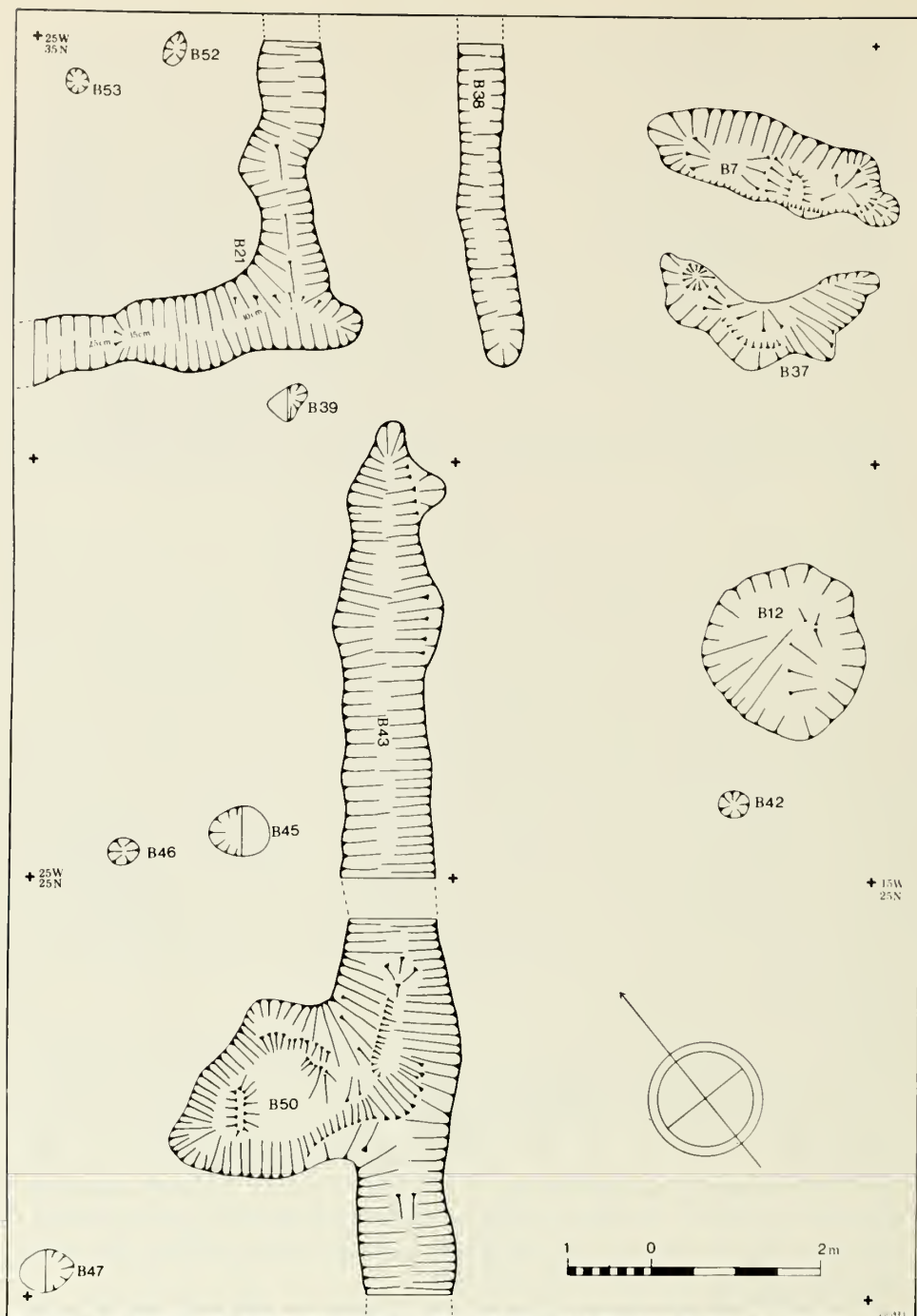


Fig. 12 Storey's Bar Road subsite, Area I, south part of the driveway and surrounding pits of Feature Division 7. For location see Fig. 6.

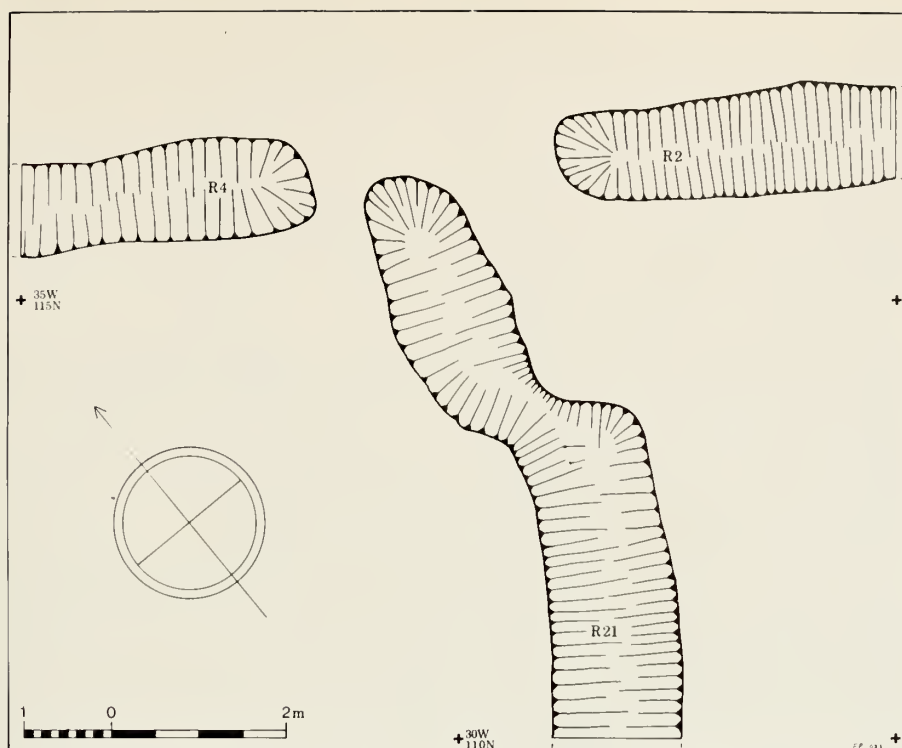


Fig. 13 Storey's Bar Road subsite, Area I, three-way gap between ditches R21, R2, and R4. For location see Fig. 6.

along the whole length of the excavated parts of R2, with only short, intermittent gaps. The ditch's profile was remarkably constant, a phenomenon that could in part be due to the even subsoil composition of the northeast part of the site. It became, however, markedly deeper and wider about 2 metres inside the southeast edge of the excavation (Fig. 9: compare sections 27 and 28). There was no evidence to show that this enlargement was caused by a recut.

Ditch B38 ran northeast-southwest, parallel to ditch B21, about 2 metres to the northeast. The filling of both ditches was identical (sand-silt with occasional gravel pebbles) and their profiles and widths, too, were similar (Fig. 8: sections 12–19).

Ditch W23 was aligned northwest-southeast. In the R quadrant it was known as R4 and it followed the same alignment as ditch R2, to the southeast. In the W quadrant it was labelled W23. We have already seen that the southeast end of R4 comprised part of the three-way-gap complex at the head of the main northeast-southwest ditch R21. Its other end (the northwest end of W23) formed part of a corner gap with ditch W24 (Fig. 11: upper). This gap was the widest found on the site, measuring 3 m from ditch to ditch. Like that of R2, the profile of W23 was remarkably uniform, with a consistent filling of homogeneous sand-silt and occasional gravel pebbles. Again, the even composition of the natural subsoil may have

contributed to the ditch's regular filling and profile. Ditch R4/W23 differed from R2 in that it did not yield many charcoal flecks, nor was there a dark horizon running through the filling (Fig. 10: sections 31–34).

Ditch W24, aligned northeast-southwest, is best considered in two parts, one 15 m long to the northeast, and the other 17.4 m long to the southwest. The northeast part was similar in profile, width, and filling to other ditches in this part of the site. The southwest part, on the other hand, was much shallower and slighter, although the filling of the two parts was similar (Fig. 10: compare sections 35–37 with 38–39). The contrast between the two parts of the ditch is well illustrated in Pl. 4.

A careful search failed to reveal any signs of a gravel spread which may have originated from an external ring-ditch bank, either in the filling of W24 or in the sand-silt around it. The upper levels of the ring-ditch filling, at the point where they were cut by W24, were homogeneous; however, below 30 cm a clear cut-line could be seen, following the alignment of W24. The extreme southwest end of W24 was difficult to follow and it may well have continued in that direction for a considerable distance.

The pair of ditches B21 and B38, aligned northeast-southwest, will henceforward be known as the “droveway”, following Atkinson's interpretation of Site IX at Dorchester, Oxfordshire, which produced later Neolithic Abingdon Ware (Atkinson et al. 1951:60). The term *droveway* is widely used to describe paired ditches in and around the Roman Fenland (Hallam 1970). Similar arrangements of paired ditches of the earlier Bronze Age have also been interpreted as animal droves (Pryor 1976). Caution, however, should be used in thus labelling all paired ditches. Drovers have a specific farming use; *drove* is not a catch-all word like, for example, *ring-ditch*.

It must be assumed that the ditches of Feature Division 1 served a practical purpose. Clearly this purpose was connected with their arrangement around two sub-rectangular enclosures. They may therefore be seen as land boundaries. Their size and layout, which show no regard for the land's rise and fall, make a drainage function seem improbable. If such an explanation is acceptable, then the corner gaps described above are best seen as entranceways into the enclosures. It should be recalled, however, that both entranceways and droves can be blocked (with, for example, a dead hedge or with hurdles) without leaving any archaeological trace. The layout of features shown in Fig. 6, therefore, was capable of considerable day-to-day modification.

With a few exceptions, the linear ditches of Division 1 are slight: often less than a metre wide and half a metre deep. Their filling is generally silty with a few gravel pebbles and there is no evidence to suggest that they were deliberately back-filled or recut after long periods of weathering. The impression given is that their filling derived from the surrounding topsoil which contained small sherds of contemporary pottery, in this instance, Grooved Ware. The quality of the pottery, when it was manufactured, was so poor that it is improbable that it would have survived at all had the ditches been regularly cleaned out. Flints, moreover, are fresh and in good condition. The complete absence of any later pottery supports the stratigraphic evidence that the ditches were allowed to fill up shortly after

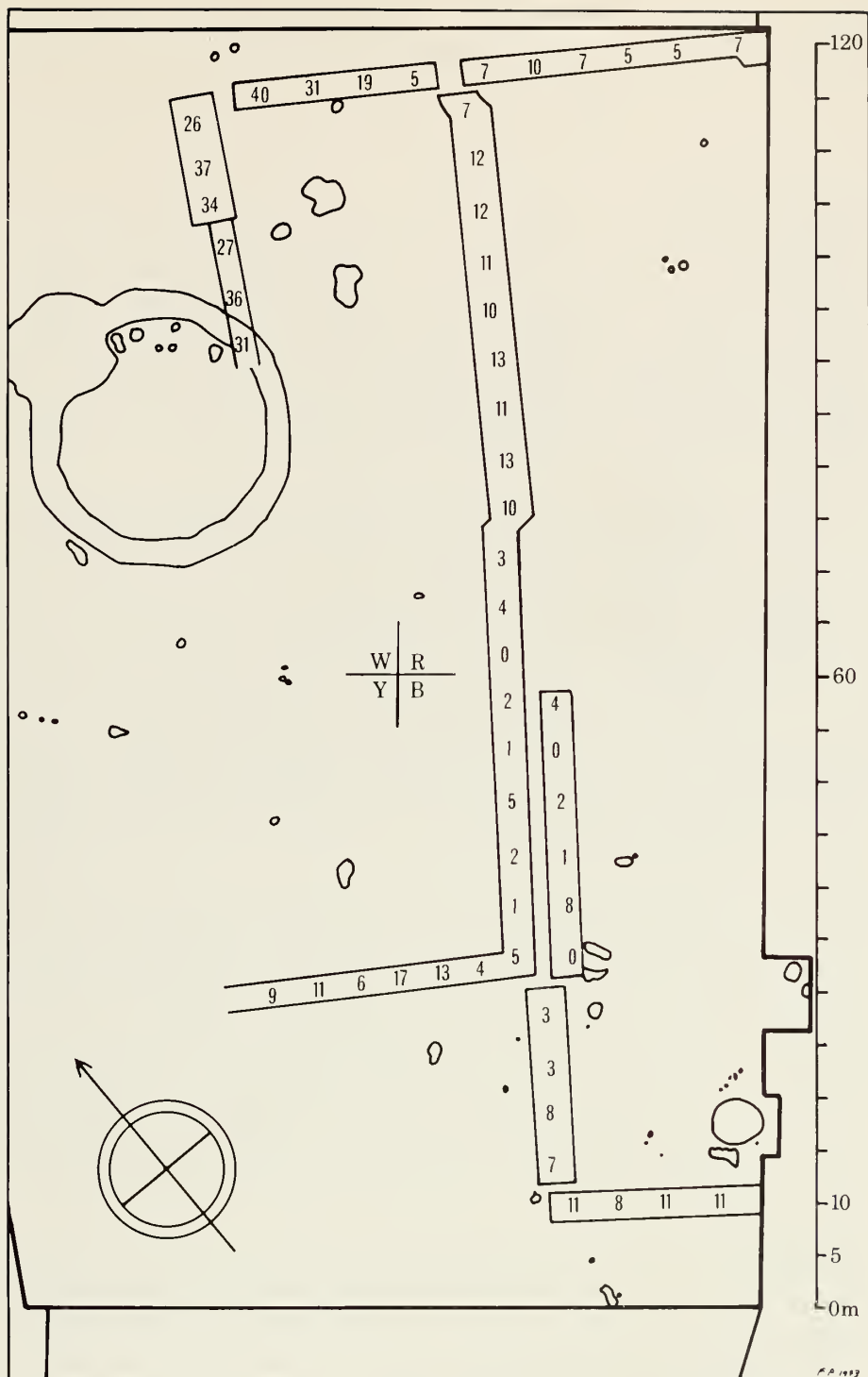


Fig. 14 Feature Division 1: partially schematic plan showing concentration of finds per 5 m of ditch.

being dug. A possible explanation for such apparently strange behaviour is that the ditches were dug to provide make-up for a hedge bank; this hypothesis is discussed more fully below.

Feature Division 2: B3 (Fig. 6 and 15)

This feature showed up clearly on air photographs as an unusually dark cropmark. It was located northeast of ditch B2. Other nearby features included B1; an irregular row of five post-holes, 0.90 m long, aligned east-west (features B5, B9, B10, B11, and B14); and a small post-hole (B60) 0.35 m east of feature B3 which contained charcoal but no finds.

Feature B3 was a pit, approximately round, 2.06 m deep and 5.02 m to 4.03 m in diameter. The water table was met at 1.47 m below the stripped surface. The stratigraphy was as follows (Fig. 17):

- LAYER 1 Sand-silt with scattered gravel pebbles, becoming slightly darker and less stony below 0.60 m. Layer 1 blended into layers 2 and 3. Colour (at 0.75 m) 10YR 3/3.
- LAYERS 2 Pale, silty sand with many gravel lenses. Silt increased towards and 3 layer 1. Colour (silt) 10YR 4/3.
- LAYER 4 Sharply increased wetness distinguished this layer from those above. Fine sand-silt with vegetable matter and distinctive orange-coloured slimy deposit near interface with layer 3.
- LAYER 5 Peat with sand-silt. Large number of randomly scattered peaty twigs throughout the layer (Fig. 16: dotted line marks the limit). Because the twigs were in very poor condition, excavation proved difficult; however, traces of a possible, partly collapsed, wattle lining could be distinguished (Fig. 16 and Pl. 2). The sides of layer 5 were distinct and may represent the original transverse section of the feature (0.95 m × 1.05 m). The interface with layer 6 was unclear, except at the sides. Below about 1.75 m the peat became mixed with the sands and gravels of layer 6.
- LAYER 6 Gravel and coarse sand with lenses of sand-silt and peat. This waterlogged layer must represent the initial collapse after the wattwork had perished, as the gravels are very unstable below the water table. (We noted that more than 0.30 m of gravel had slipped into the clean excavated feature within a month of our abandoning it.)

The wattwork found in layer 5 has parallels at Fengate and elsewhere in Britain (FNG 1:25, with references) and there can be little doubt that it formed the lining of a well. Similar "sock wells" were dug in the area until recently. B3 will therefore be known as the "well" in the discussion that follows.

The stratigraphy of the well suggests that it was filled by natural agencies; for contrast, however, compare the back-filled Iron Age well of the Padholme Road subsite (FNG 1:fig. 18). The precise plotting of the horizontal

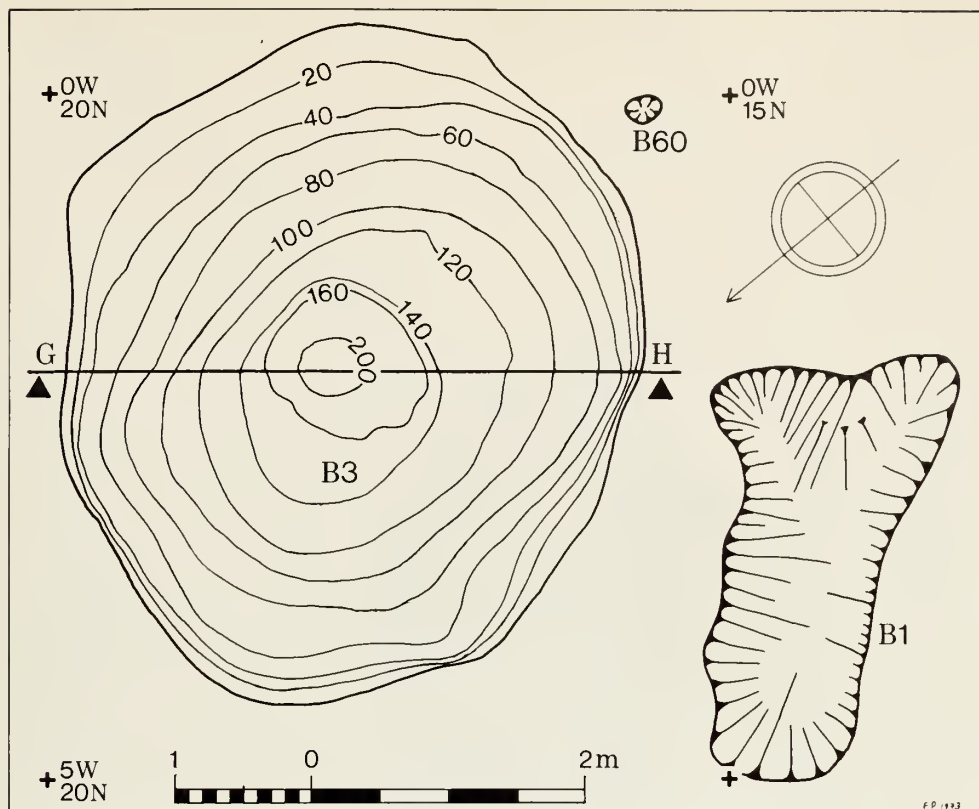


Fig. 15 Storey's Bar Road subsite, Area I, the well B3 and neighbouring features of Division 7. Contours are in centimetres below the stripped surface (3.60 m O.D.).

location of finds within B3 seems to indicate that the soil with the heaviest scatter of occupation debris slipped in from the north, in the direction of the driveway and the five nearby post-holes (B5, B9, B10, B11, and B14). This northerly distribution of finds in the top 1.10 m of filling is illustrated in Fig. 18. Below 1.10 m the filling became more "rapid" and there can be no guarantee that the accumulation of these deeper deposits proceeded uniformly. The northerly trend of finds, principally from layer 1, is unlikely to be caused by variations in the well's profile, which is evenly shaped (Fig. 15: the contours illustrate the inverted conical profile). Indeed, if any bias could be caused by an irregular profile alone, it would be towards the south. The distribution of finds below 1.10 m (Fig. 19), although conforming to the observed trend, should be treated with caution, owing to the possibility of a funnelling effect below that depth. The scarcity of finds on the southwest side of the feature is most marked.

Radiocarbon sample HAR-398 (1050 ± 70 bc) was taken from twigs of the collapsed wattle lining. The sample size was adequate and the date is acceptable. It will be shown below that this date provides a *terminus ante quem* for the settlement and field system.

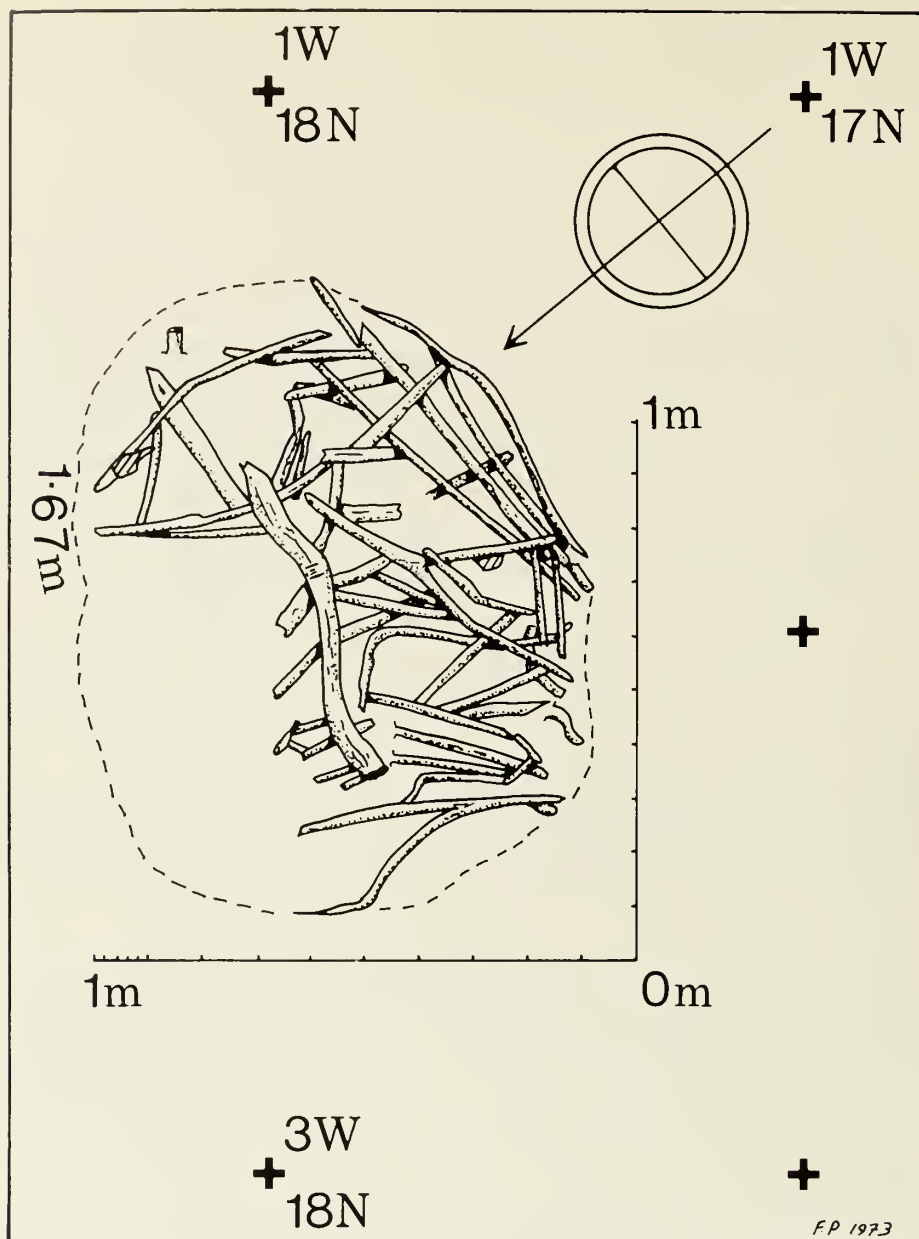


Fig. 16 Storey's Bar Road sub-site, Area I, the well B3: plan of wood found in layer 5. (See also Pl. 2.)

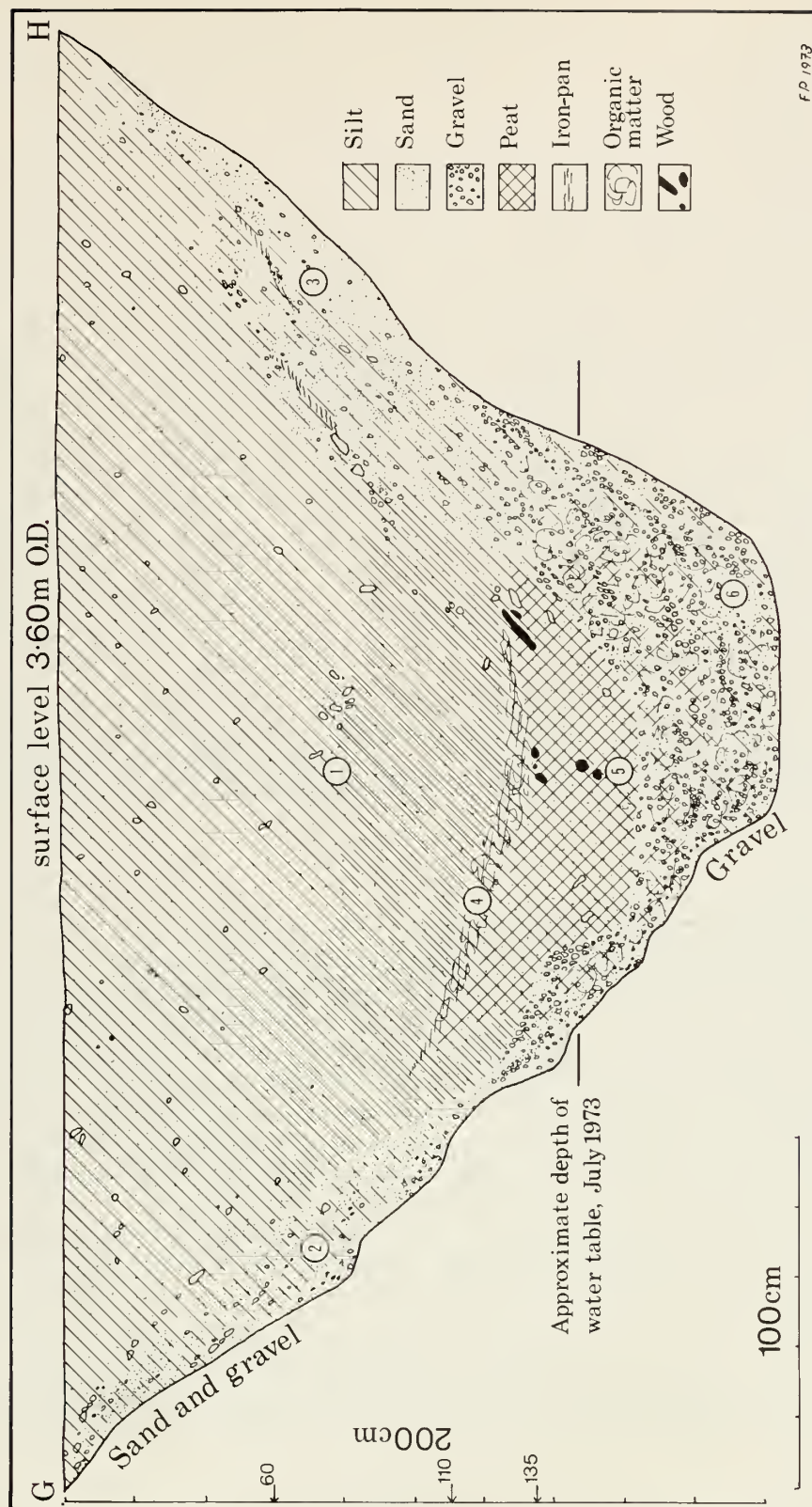


Fig. 17 Storey's Bar Road subsite, Area I, the well B3, section. For location of section line see Fig. 15.

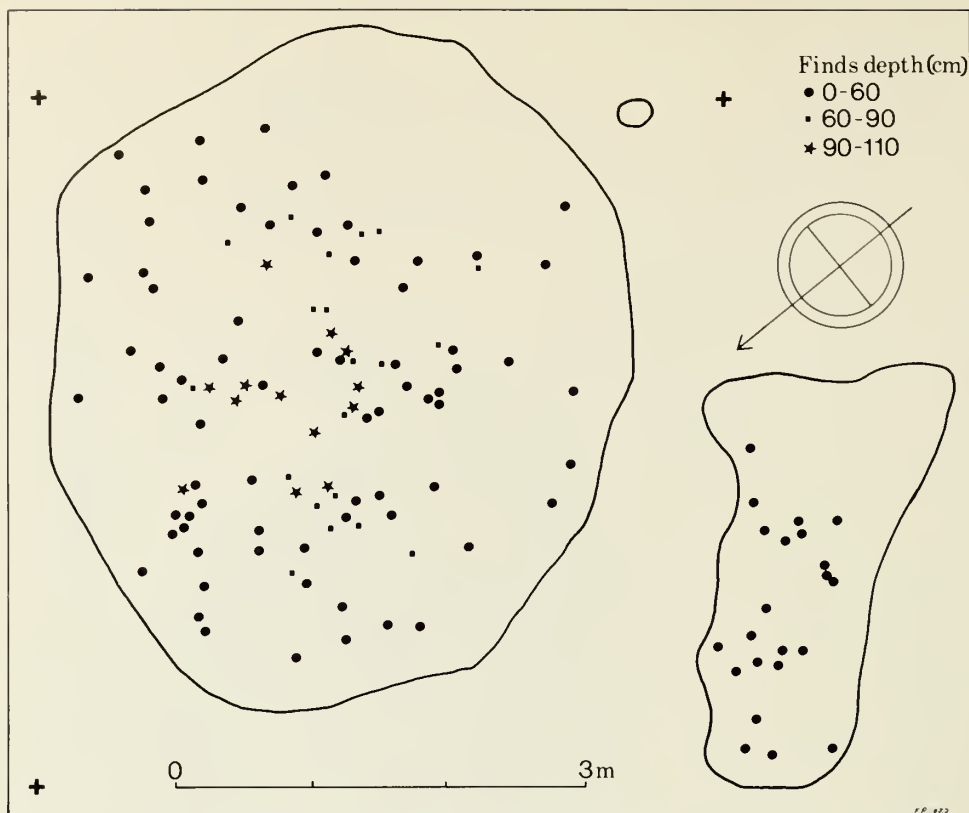


Fig. 18 Storey's Bar Road subsite, Area I, the well B3: distribution of finds above 1.10 m.

Feature Division 3: Pit Y4 (Fig. 20)

Pit Y4, centred on Grid 40/36, northeast of ditch Y21, was roughly oval in plan (2.7 m × 1.85 m), with its main axis aligned approximately northeast-southwest. The profile was uneven, with a gently sloping south wall and a "sump" (1.25 m × 0.85 m), entirely filled with layer 3, 1.27 m deep. The almost vertical northeast wall (Fig. 20) was at least 40° steeper than the natural subsoil's angle of repose. We might therefore conclude that the pit was back-filled shortly after being dug. The nature of the filling also tends to confirm this observation. Further, when discussing the engineering geology of the Peterborough region gravels, Horton et al. (1974:70) observe "... dry slopes may stand vertically for a short time, though weathering or water will reduce them to the angle of rest for the pebbles (up to 30°)". The pit's stratigraphy was as follows (Fig. 20):

LAYER 1 Sand-silt with a few scattered gravel pebbles. A band of darker sand-silt was observed near the bottom of the layer. It contained fragments of bone, much charcoal, burnt stones, sherds of plain Grooved Ware, and numerous flints.

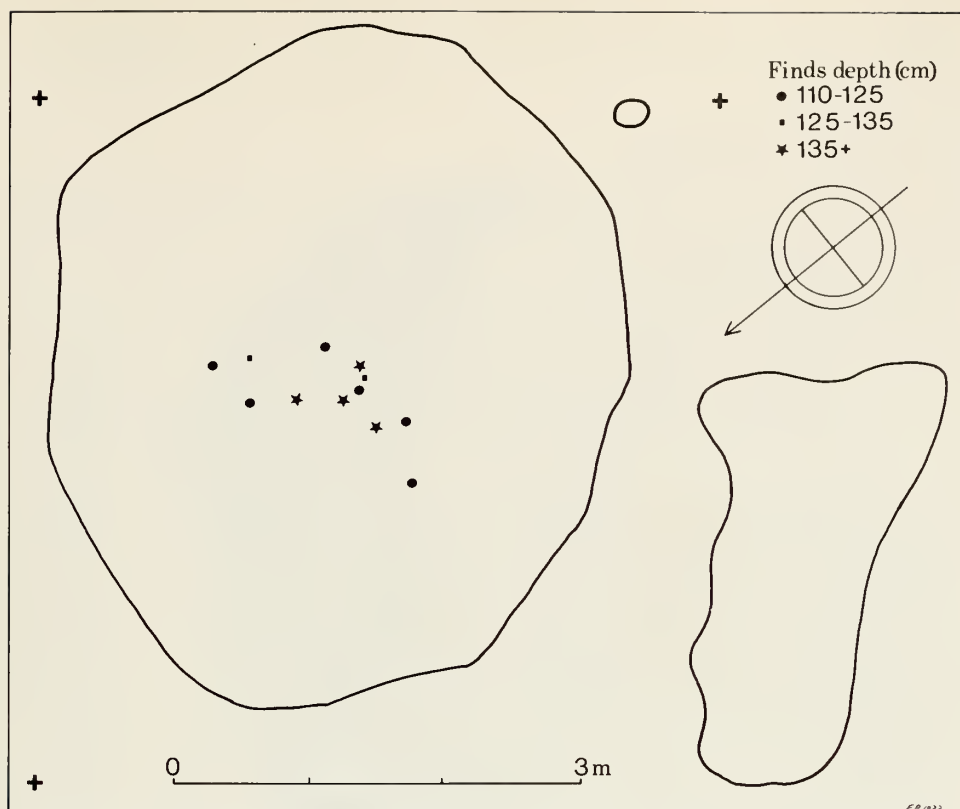


Fig. 19 Storey's Bar Road sub-site, Area I, the well B3: distribution of finds below 1.10 m.

- LAYER 2 Very similar to layer 1 above the darker horizon, but slightly less silty and with more sand and gravel. Layer 2 was confined to the southeast part of the pit. The interface between layers 1 and 2 was indistinct.
- LAYER 3 Sand and gravel with animal bones. The distinction between this layer and those above was very sharp and marked by 3 cm to 4 cm of iron-pan. Bone preservation was better than elsewhere on the site. The bones were evenly distributed throughout the layer which penetrated nearly to the water table.

Most of the artifacts found were in the dark band near the bottom of layer 1, in the southwest part of the pit. The distinction between the top two layers and layer 3 was so great that layer 3 was considered as part of the natural gravel, until a bone was found. Layer 3 could not be excavated one-half at a time because of insufficient working space within the "sump"; its representation in Fig. 20 is therefore partly schematic.

The radiocarbon sample HAR-401 (2010 ± 90 bc) was composed of charcoal taken from layer 1 in the vicinity of the Grooved Ware sherd shown in the

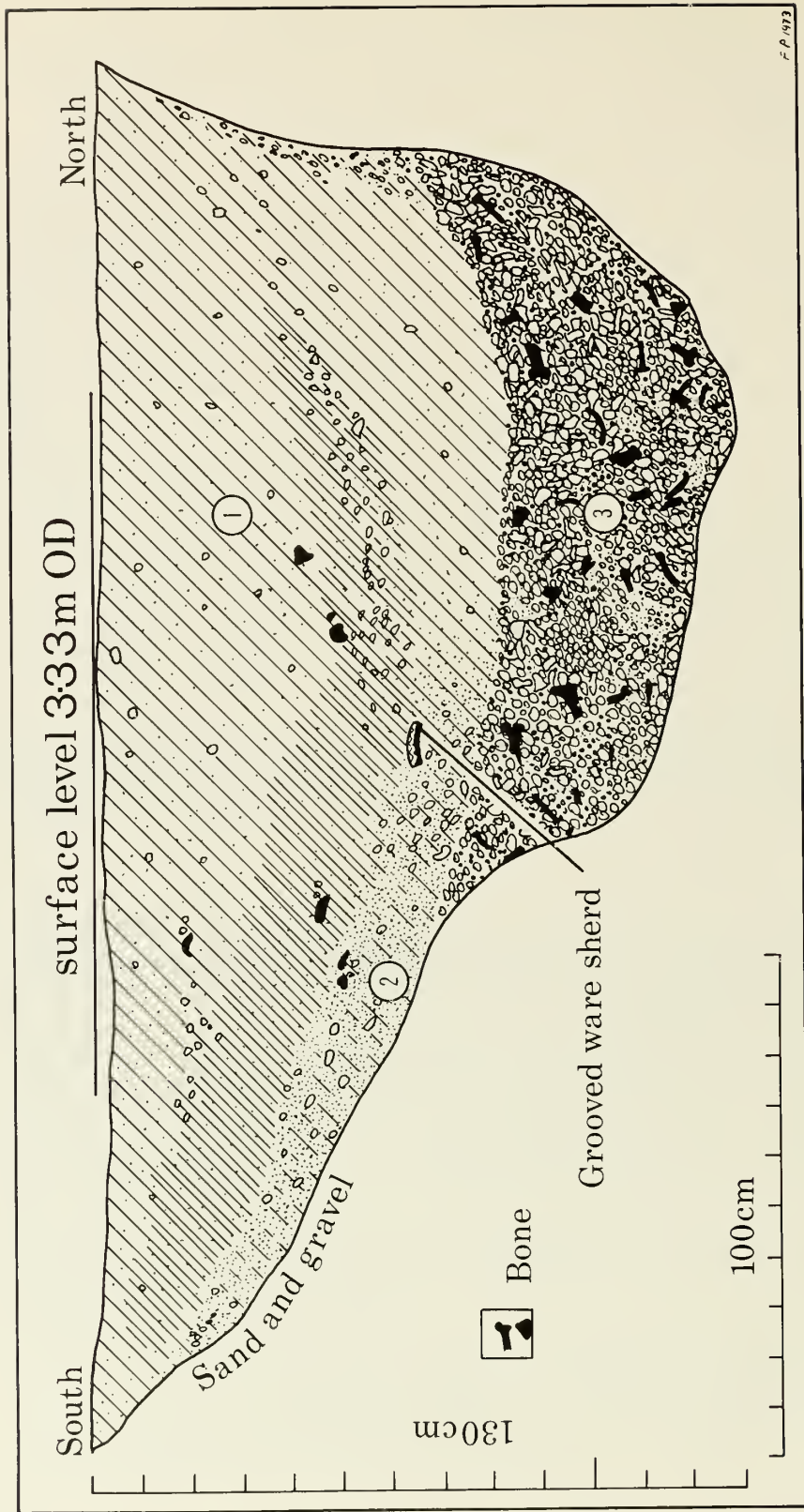


Fig. 20 Storey's Bar Road subsite, Area 1, pit Y4: section (aligned northeast-southwest). Layer 3 is semi-diagrammatic; the Grooved Ware sherd is illustrated in Fig. 37:16.

section (Fig. 20). The date falls well within the range of other Grooved Ware sites in Britain.

Feature Division 4: W1 (Fig. 6, 21, 22, 23, 24, 25)

The ring-ditch, feature W1, located just south of the centre of the W quadrant (Fig. 6), was slightly oval in plan. The external diameter varied from 25 m (northwest-southeast) to 27 m (northeast-southwest) (Fig. 21). The width of the ditch varied from 2.20 m to 2.50 m, and the depth between 0.80 m and 1.10 m. The profile was a consistent open U-shape.

The stratigraphy of the ring-ditch (applicable to all sections except no. 14 and 15) was as follows (Fig. 22, 23, and 24):

- LAYER 1 Sand-silt with some sand and gravel. The distinction between layers 1 and 2 was not always clear (Fig. 22: compare sections 1 and 2); it was generally marked by an increased number of gravel lenses and a greater admixture of sand in the sand-silt, giving a slightly paler colour. In some of the southwest sections (no. 2–5) a darker, finer horizon of sand-silt, free from gravel pebbles, was observed, either at the bottom of layer 1 (Fig. 22: section 2) or towards the top of layer 2 (Fig. 22: section 4). This darker horizon varied in thickness, but was continuous. It was first observed about 2 metres south of section 1 and was lost midway between sections 5 and 6. The deposit was also observed at the bottom of layer 1 between sections 7 and 8. Layer 1 colour varied, the commonest being 10YR 3/3.
- LAYER 2 Sand-silt with sand, gravel, and gravel lenses. This layer became somewhat more stony towards the layer 3 interface, and the distinction between these two layers was often unclear. Colour again varied, but 10YR 4/4 was common.
- LAYER 3 Sand and gravel with occasional sand-silt lenses. The interface of layers 2 and 3 was sometimes marked by a 2 cm-thick deposit of iron-pan (Fig. 22, 23, and 24: sections 2, 10, and 17). Iron-pan was also sometimes found within the layer (section 4).

The stratigraphy of the ring-ditch at sections 14 and 15 was as follows (Fig. 23: section 15):

- LAYER 1 Sand-silt with gravel pebbles in an even homogeneous mix. The colour was unvaried at 10YR 4/4.
- LAYER 2 Sand-silt with occasional gravel pebbles, similar to layer 1 elsewhere in the ring-ditch. Interface 1/2 was not clear, and the colour was the same as that of layer 1.
- LAYER 3 Sand and gravel with small silt lenses, similar to layer 3 elsewhere in the ring-ditch.

The stratigraphy of all sections, except numbers 14 and 15, was typical of natural weathering (compare, for example, Pyddoke 1961:pl. VI). With the possible exception of a small gravel slip near the top of layer 2 in section 21 (a slip that is absent in the next balk, section 1), there was no sign of a collapsed clean gravel mound or external bank.

The anomalous sections (14 and 15) formed the walls of a balk that was placed across the centre of a disturbed area of ditch. This disturbance was about 3 metres long and was marked by an increased concentration of gravel in the upper 30 centimetres of filling. The whole of the disturbed area produced a greater than average number of finds, both in artifacts and animal bones (Fig. 21). An articulated, but much decayed, dog skeleton was found at the bottom of layer 2 in the centre of the ditch immediately southeast of section 14. The apparent inversion of layers 1 and 2, as found elsewhere in the ring-ditch, may have been due to a local recutting of the ring-ditch, probably associated with the animal burial — although a grave was not apparent. The ditch appeared to have been recut for a short length and the animal thrown in; this would account for the lack of bedding planes within the filling and the very abrupt interface of layers 2 and 3.

GRAVES 1 AND 2 (FIG. 21 AND 25)

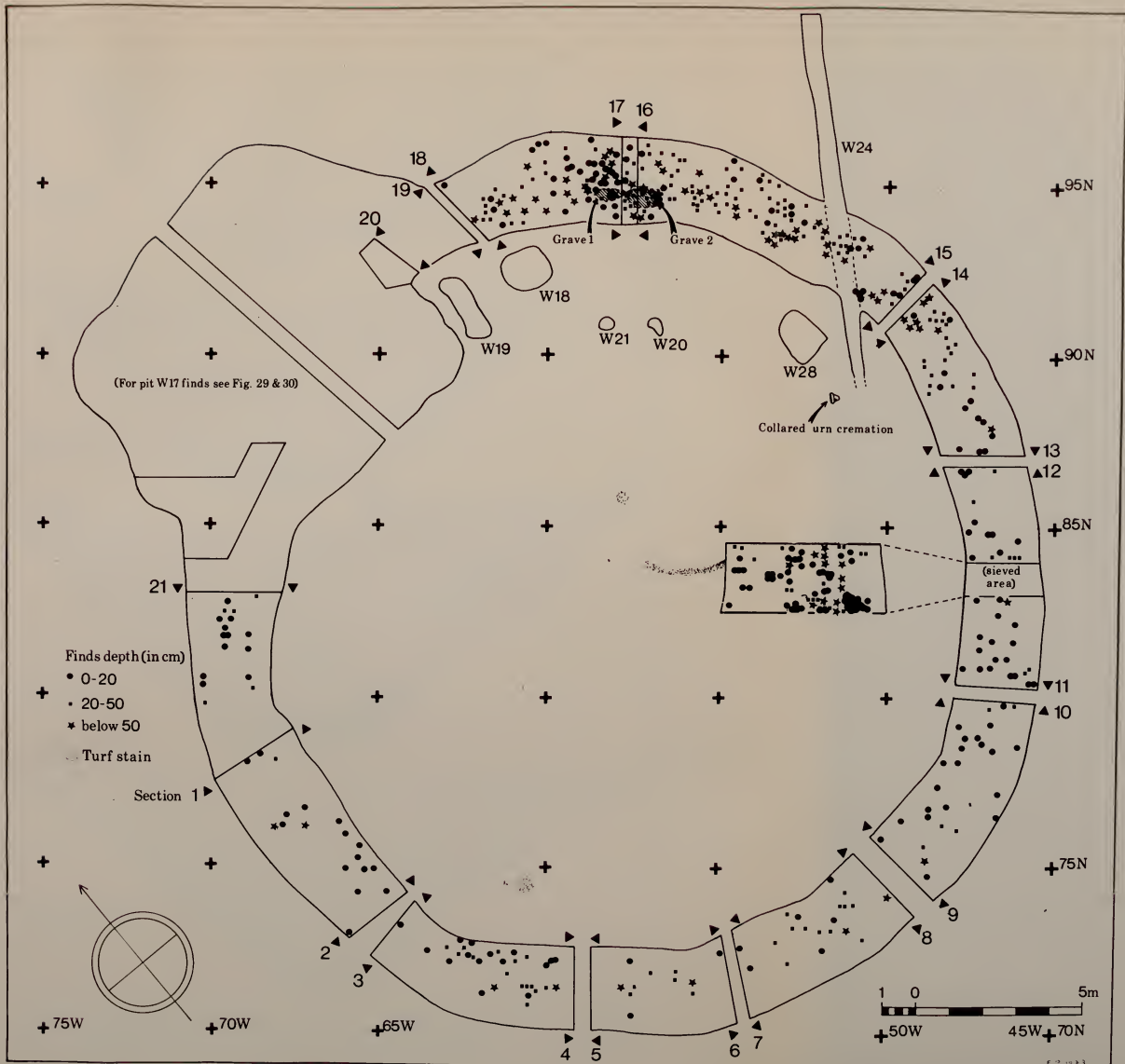
Two crouched inhumations in graves 1 and 2 were found in layer 2 at Grid 58/94. Grave 1 measured 0.70 m × 0.40 m; grave 2, 0.90 m × 0.50 m. Parts of both graves were cut into the natural gravel subsoil of the inside wall of the ring-ditch. The filling of the graves was of sand-silt with very few gravel pebbles (Fig. 24:section 17). The sides and bottom of the graves were clear, but the upper filling blended into the similar sand-silts of ring-ditch layers 1 and 2. Iron-pan had formed on the bottom and walls of both graves where they had cut into the natural gravel.

Feature Division 4 Finds' Distribution

The distribution of finds in the ring-ditch filling shows a marked increase to the northeast, both in the number of artifacts found and in depth at which they occur. This pattern probably reflects the presence nearby of features belonging to Division 8. The even spread of finds vertically through the various layers suggests that the ring-ditch filling accumulated naturally. The finds provide a *terminus post quem* for the silting-up of the ring-ditch. To the southwest, finds tend to be concentrated near the inner edge of the ditch, as though the soil that slipped in from the area enclosed was more densely packed with artifacts than that from outside. Finds from the large pit (W17), described below, also show this trend.

Features, both funerary and domestic, found in the area enclosed by the ring-ditch, are described below.

Fig. 21 Storey's Bar Road subsite, Area I, plan of the ring-ditch showing location of all finds. Finds from the large pit W17 are shown separately in Fig. 29 and 30.



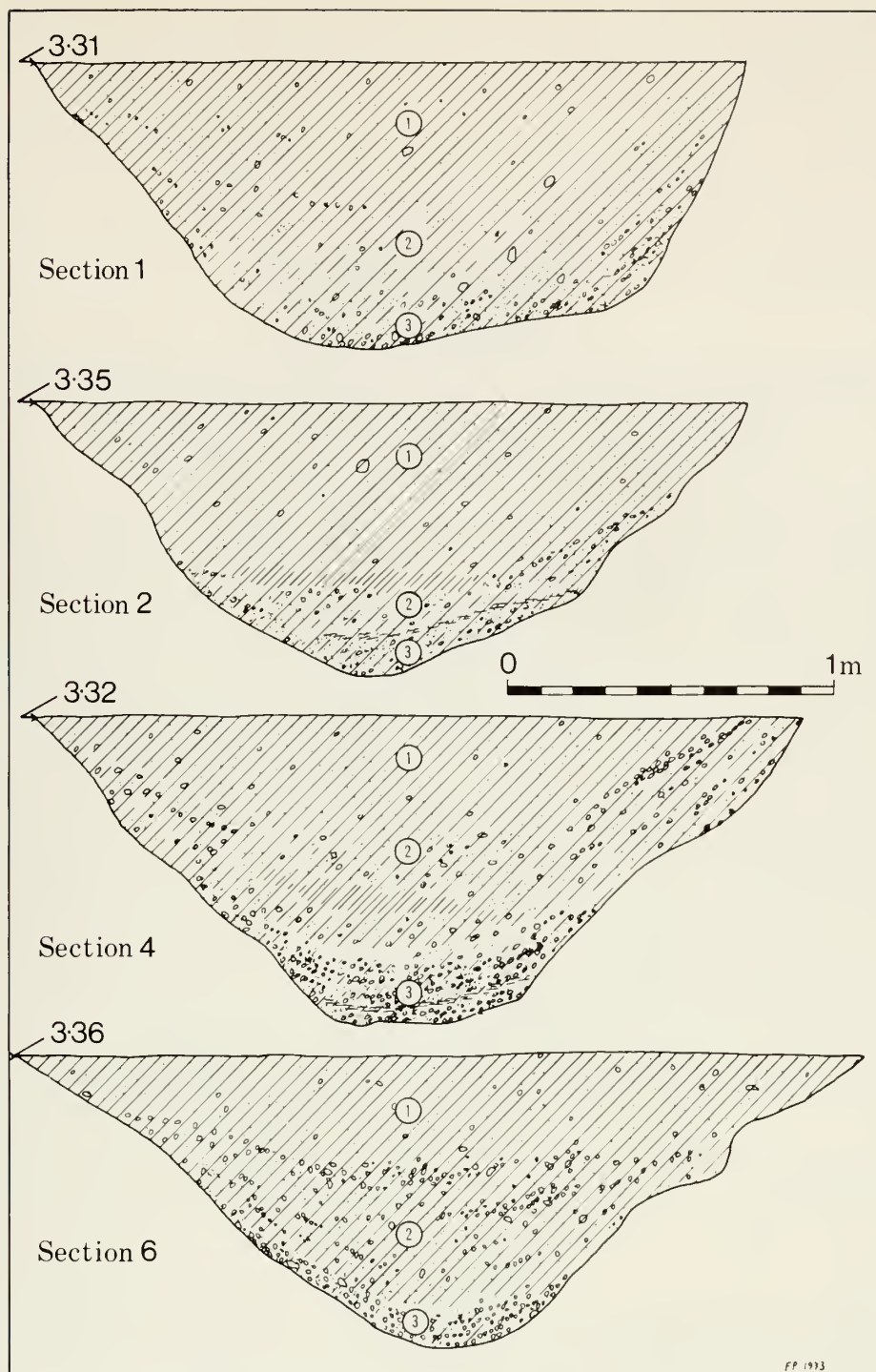


Fig. 22 Storey's Bar Road sub-site, Area I, the ring-ditch: sections 1, 2, 4, and 6. For location of sections see Fig. 21. Surface levels in metres O.D.

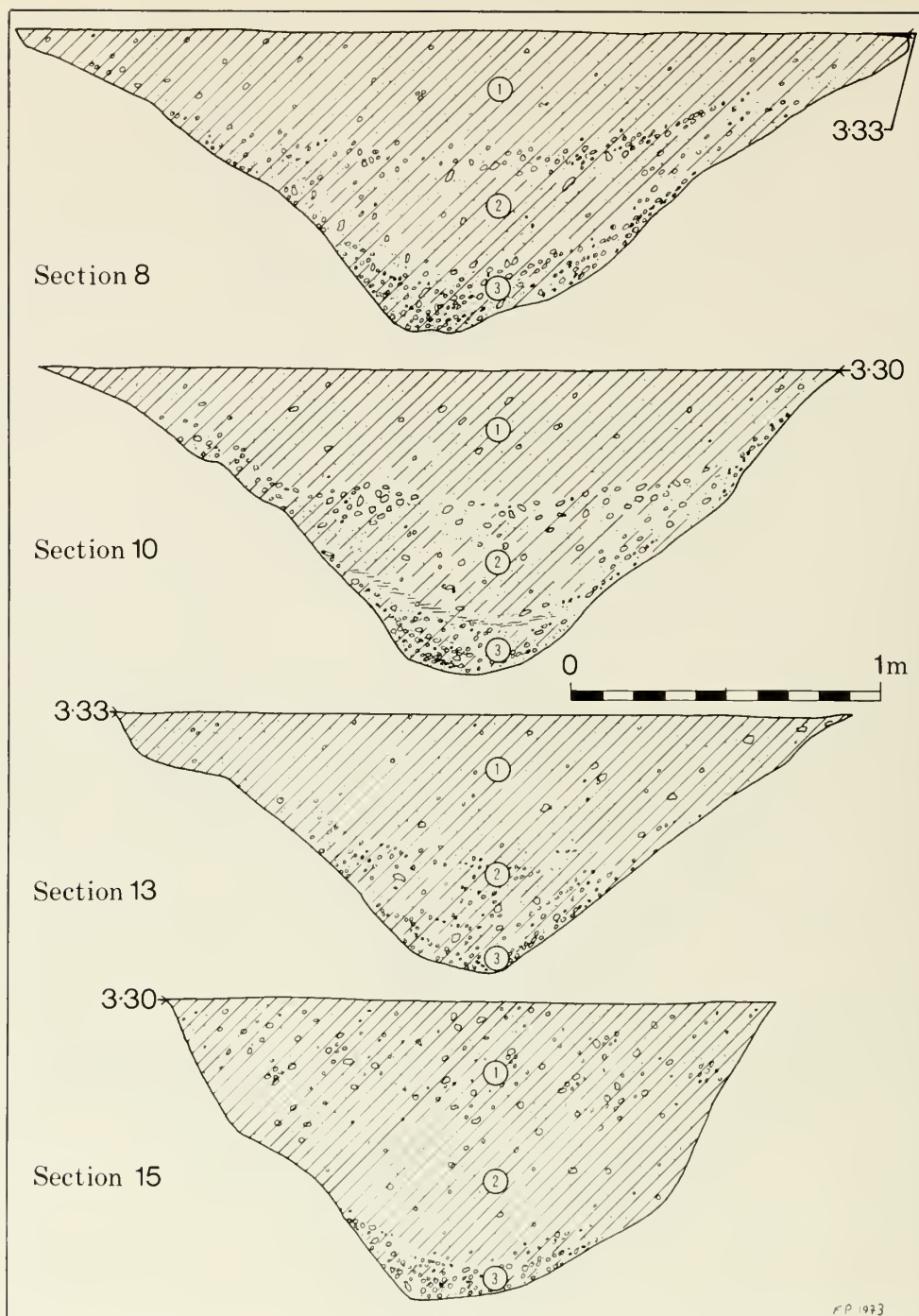


Fig. 23 Storey's Bar Road sub-site, Area I, the ring-ditch: sections 8, 10, 13, and 15. For location of sections see Fig. 21. Surface levels in metres O.D.

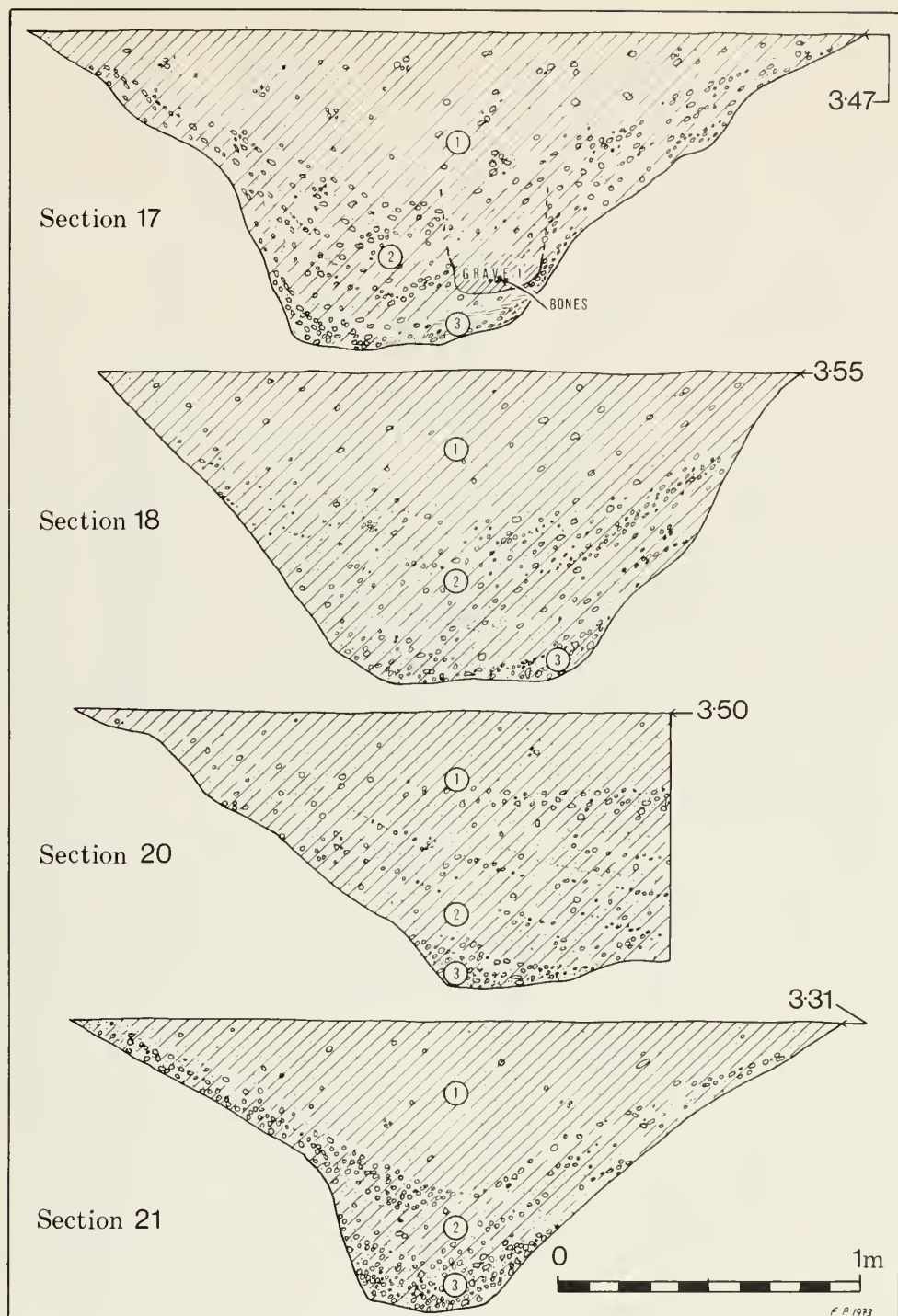


Fig. 24 Storey's Bar Road subsite, Area I, the ring-ditch: sections 17, 18, 20, and 21. For location of sections see Fig. 21. Surface levels in metres O.D.

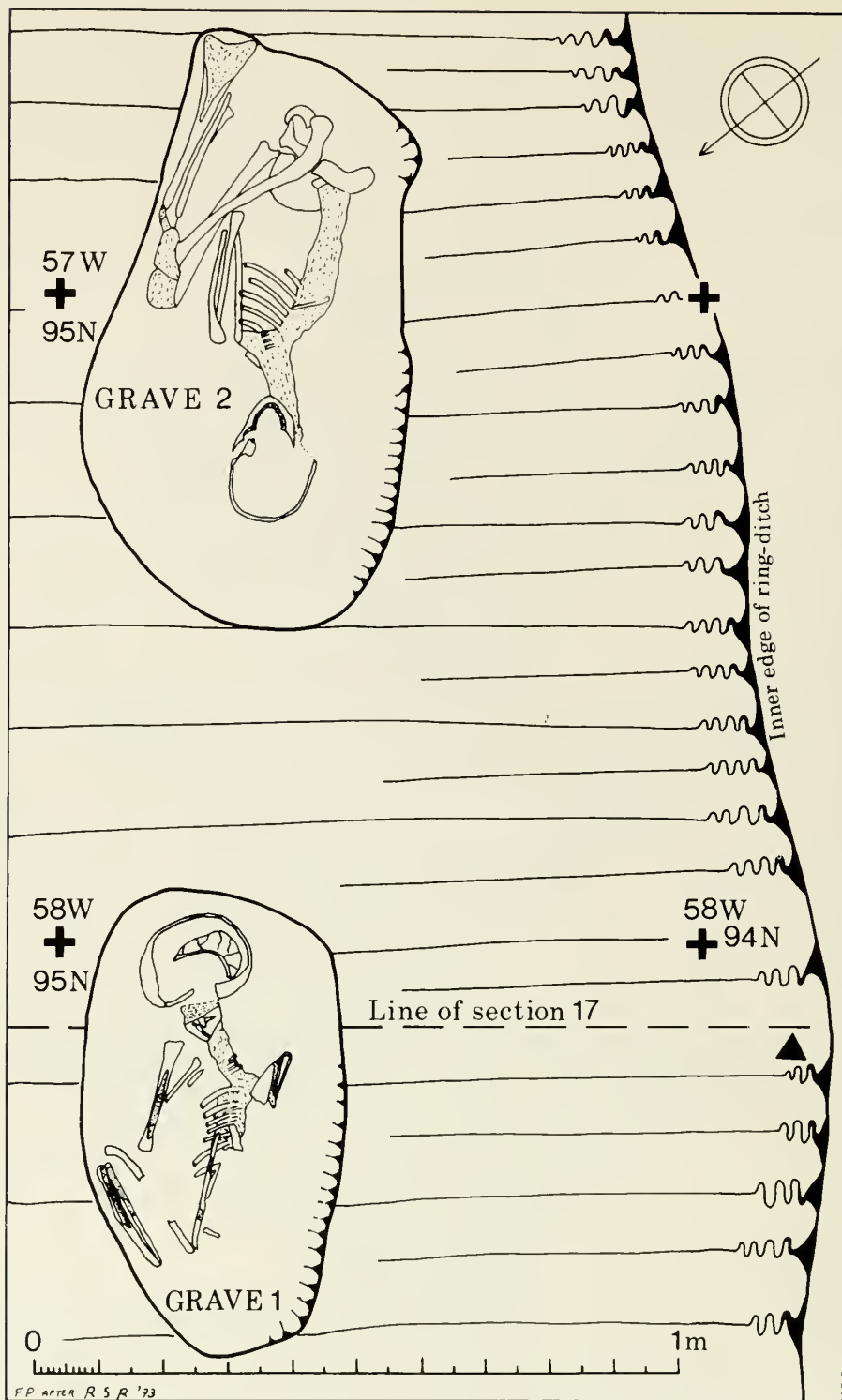


Fig. 25 Storey's Bar Road subsite, Area I, the ring-ditch: graves 1 and 2. For location see Fig. 34.

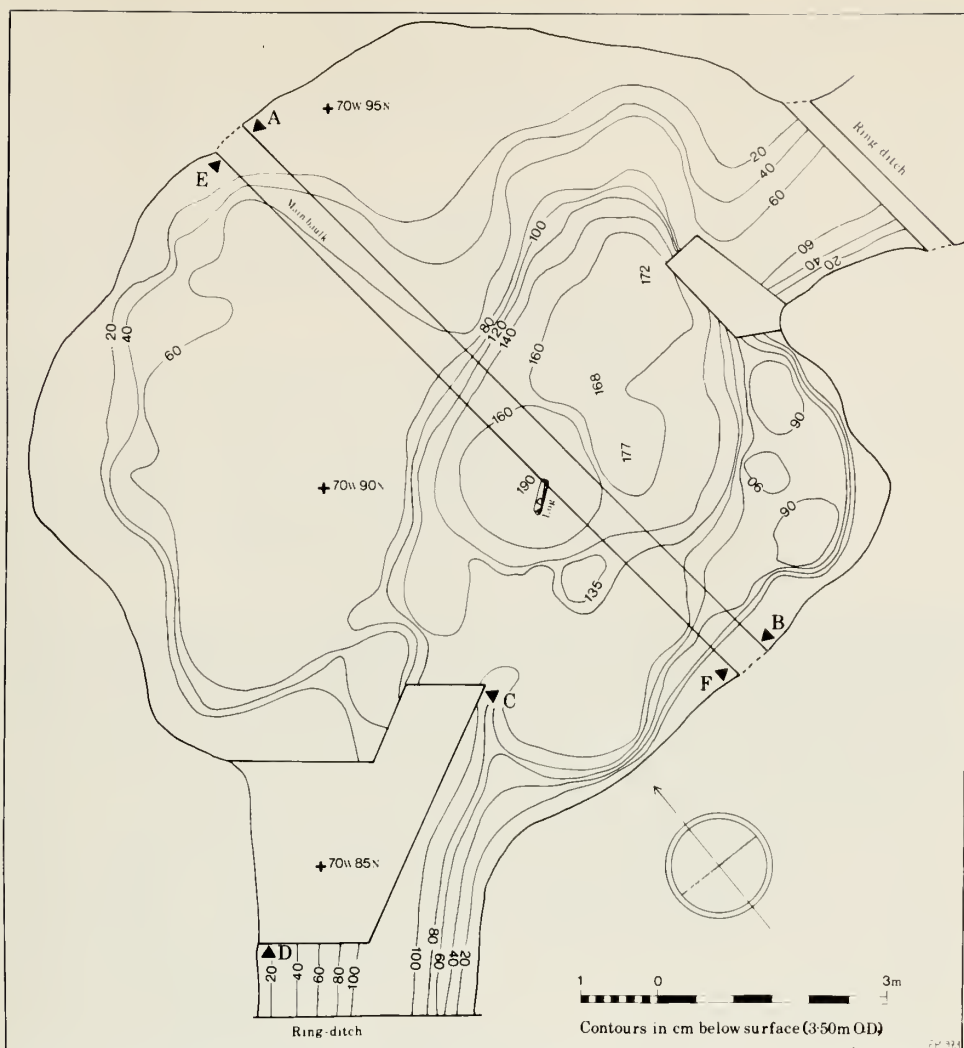


Fig. 26 Storey's Bar Road sub-site, Area I, large pit W17: general contour plan, without finds.

Feature Division 5: W17 (Fig. 6 and 21)

Feature W17 was a large pit, straddling part of the ring-ditch, and was somewhat irregular in plan, measuring 10.0 m (north-south) by 11.30 m (east-west) at the surface. Its greatest depth was just southwest of the main transverse section at 1.90 m below the surface. The stratigraphy was as follows (Fig. 27 and 28):

- LAYER 1** Sand-silt with occasional gravel pebbles. Very like the ring-ditch layer 1. Hard iron-pan at the centre at interface of layers 1 and 4. Colour 10YR 4/4 (dark yellowish brown).

- LAYER 2 Sand-silt with pebbles, sand, and gravel lenses. The sand and gravel concentration increased towards the north. This layer corresponds to ring-ditch layers 2 and, perhaps, 3. It lay under layers 1 and 4, and over layer 5. Colour 10YR 5/6 (yellowish brown).
- LAYER 3 This was the name given to layer 2 in the short length of ring-ditch between section 21 and the edge of W17 (Fig. 28).
- LAYER 4 A thin, distinctive layer of stoneless sand-silt under the basal iron-pan of layer 1, occurring in the pit centre only. Colour 10YR 5/3 or 5/2 (greyish brown).
- LAYER 5 Wet, heavy sand-silt with occasional gravel pebbles and much organic material. Colour 10YR 3/1 (very dark grey).
- LAYER 6 Sharp, white gravel with coarse sand and sand-silt; also iron staining and some organic matter. This layer was found only in a restricted area north of the main transverse section. Elsewhere, the transition from layer 5 to the natural subsoil was clear and usually marked by a 2-cm deposit of iron-pan.

The pit was excavated in 20-cm spits, each spit being cleaned and planned before the next was started. Careful inspection of the many plans showed no evidence that the ring-ditch cut through the pit filling, or *vice versa*. Both features blended evenly into each other. This impression was supported by the distribution of finds at each level, which again showed an even transition between the two features.

The gradual transition between the two features was also seen in the sections. In the east portion of the pit, section 20 of the ring-ditch (Fig. 24) showed that the bedding planes of all three layers dipped towards the deeper parts of the pit to the north. Apart from the fact that the bedding planes did not rise again to give the open U-shaped profile of the ring-ditch, the filling seen in section 20 was identical to that in other ring-ditch sections. The longitudinal section (Fig. 26:section C-D and Fig. 28) showed no disconformity in the deposits such as might have been caused had the pit been cut through the filling of the ring-ditch.

The usual layer 2 of the ring-ditch was labelled layer 3 in the short length of ditch north of section 21. This was done in order to avoid the confusion that would have arisen had layer 2 of the pit been separate from layer 2 of the ring-ditch. As it was, the two layers blended evenly into each other.

There can be little doubt that layers 1 to 6 accumulated as the result of weathering. Tip lines were absent and the filling was on the whole evenly graded, with gravel pebbles becoming more frequent towards the bottom. Bedding planes, though faint, were regular and undisturbed, and conformed with the contours of the pit; also, the filling matrix changed as the natural subsoil changed. A close inspection of the many 20-cm spit plans showed an even distribution of finds, without the local concentrations associated with back-filled features.

In view of the even distribution of finds it was decided to plot the vertical and horizontal location of each artifact (Fig. 29 and 30). The intervals of

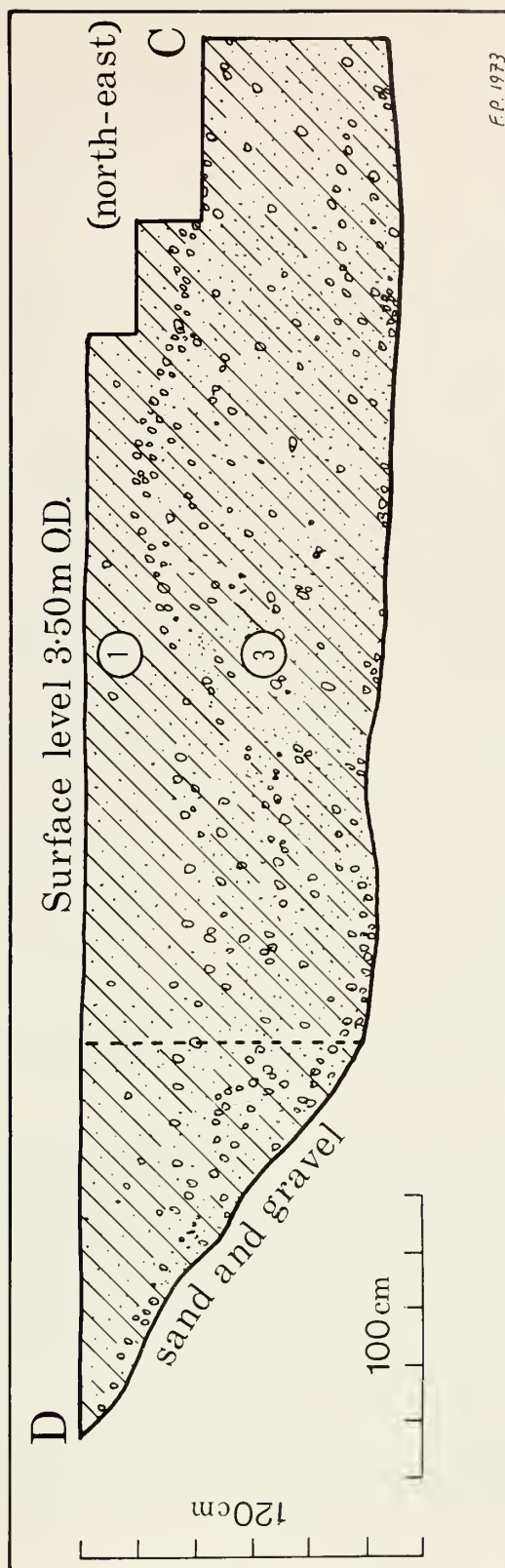


Fig. 28 Storey's Bar Road subsite, Area I, section at junction of ring-ditch and large pit W17. For location of section see Fig. 26.

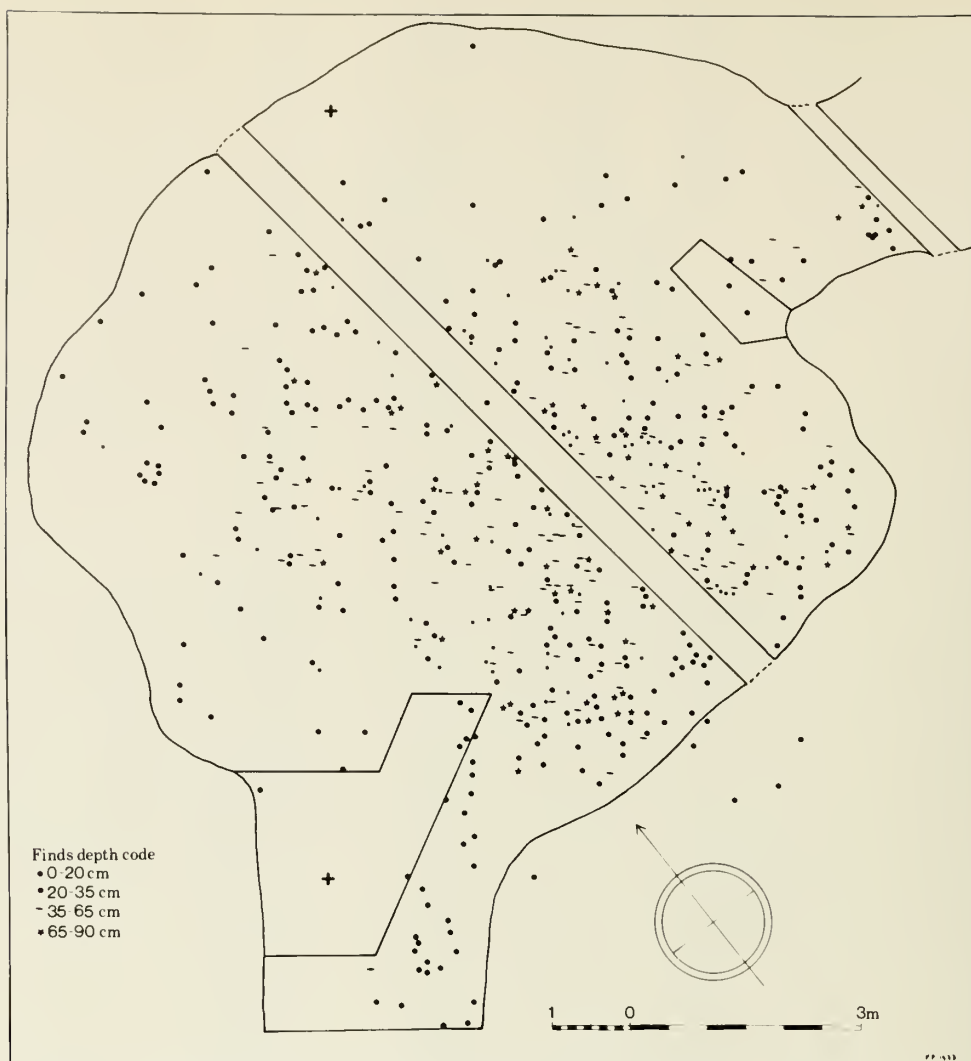


Fig. 29 Storey's Bar Road subsite, Area I, large pit W17: location of finds above 0.90 m.

depth chosen for illustration here were determined by the major changes in the pit's contours (Fig. 26). In general, finds below 0.90 m came from layer 2 and below; to judge from the high stone content and the thick, more obvious, bedding planes, this silting would have been considerably more rapid than that of layer 1. The chances of obtaining an undistorted picture of the density of the finds in the soil that originally surrounded the pit would, therefore, be smaller. Thus finds from below 0.90 m have been kept separate (Fig. 30).

Finds from above 0.90 m show a pronounced concentration towards the area enclosed by the ring-ditch. It might be argued that this is a result of the deeper deposits of the south part of the pit, but an analysis of the highest finds (surface to 0.30 m) shows the same trend towards the interior. This

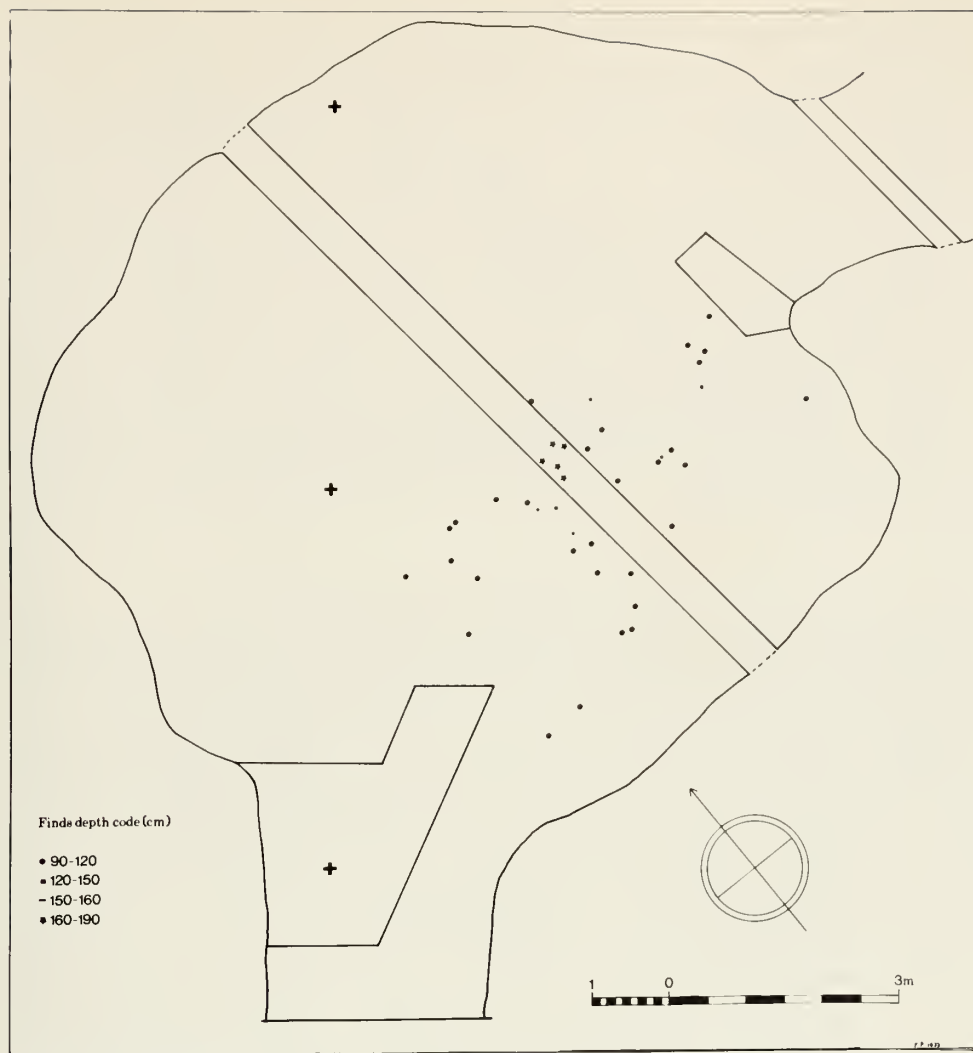


Fig. 30 Storey's Bar Road subsite, Area I, large pit W17: location of finds below 0.90 m.

strongly suggests that the soil in the area enclosed by the ring-ditch contained many more artifacts than that outside.

The deepest part of the pit (Fig. 26) lay along the presumed course of the ring-ditch, as did the deeper finds (Fig. 30). The distribution of the latter and the pit contours below 0.90 m suggest that the pit had been dug using the ring-ditch as a starting point.

It should also be noted that the major expansion of the pit was northward, away from the area enclosed by the ring-ditch. The south wall of the pit, which approximately continued the line of the ring-ditch's inside edge, was much steeper than that to the north.

The two radiocarbon samples were taken to determine the length of time the large pit had remained open and possibly in use. A small, apparently

unworked, wooden stake, about 5 centimetres in diameter, was found protruding from the natural gravel subsoil at Grid 65/92, near the balk of ring-ditch section 20 (Fig. 21). Although not located in the deepest part of the pit, the fact that it had been thrust some 10 centimetres into the natural gravel, suggested that the pit was both open and in use at the time. The stake provided sample HAR-406 (1340 ± 80 bc), and the date, if somewhat more recent than expected, is still acceptable. The second sample was taken at the centre of the feature and was composed of young twigs which were found in great abundance around the top of the notched alder log, at a depth of 1.35 m, towards the layer 5/2 interface at Grid references 67/89 and 67/90. HAR-407 and HAR-786 (720 ± 90 bc and 850 ± 80 bc respectively) were both taken from the highest waterlogged deposits and therefore represent a late stage in the feature's history. The presence of many seeds of the Sedge family (Appendix 3) strongly suggests very wet conditions in the deepest parts of the pit, which may have stayed open as a small, rather stagnant pond for many years.

Feature Division 6: W29, W30, W31, W32, W33 (Fig. 31 and 33)

Table 25 lists the flint artifacts found in the Division as a whole. Details of the flints found in each feature are given in the feature descriptions that follow.

- W29** An irregularly-shaped oblong pit in the centre of the area enclosed by ditches R21, R4, W24, and the ring-ditch; L. (N-S) 3.48; W. (E-W) 2.40; D. 0.38–0.56. Filling consisted of homogeneous sand-silt, with scattered gravel pebbles and no visible bedding planes. Areas of darker sand-silt, with high concentrations of charcoal flecks, were observed in the north and south sections. Both patches of charcoal derived from outside the feature, since neither the filling nor the surrounding natural subsoil showed signs of having been burnt. The two parts of the feature were separated by a spread of slightly paler filling which produced very few finds. One sherd of Grooved Ware was found (Fig. 38:5). Flints included 3 scrapers; 19 utilized flakes; 103 waste flakes; and 4 pieces of irregular workshop waste. Total flint weight: 363.4 g.
- W30** A roughly circular shallow pit with irregular sides. D. (max.) 0.35; Dia. 1.81. Pale sand-silt filling with a few large charcoal pieces. Finds of 2 utilized flakes; 6 waste flakes; and 1 piece of irregular workshop waste. Total flint weight: 10.3 g.
- W31** A large, irregular, shallow-sided pit or depression, similar to W29. W. (max., E-W) 4.02; L. (N-S) 3.0; depth similar to W29. Filling of sand-silt with a few gravel pebbles. Finds were mainly concentrated in the two hollows, one to the northwest, one to the south. Both hollows had dark fillings (Fig. 33:section W31). Finds of 2 Grooved Ware sherds (Fig. 38:6 and 7); 3 scrapers; 1 broken transverse arrowhead; 18 utilized flakes; 92 waste flakes; 6 cores; 19 pieces of irregular workshop waste; and 1 hammerstone. Total flint weight: 952.0 g.

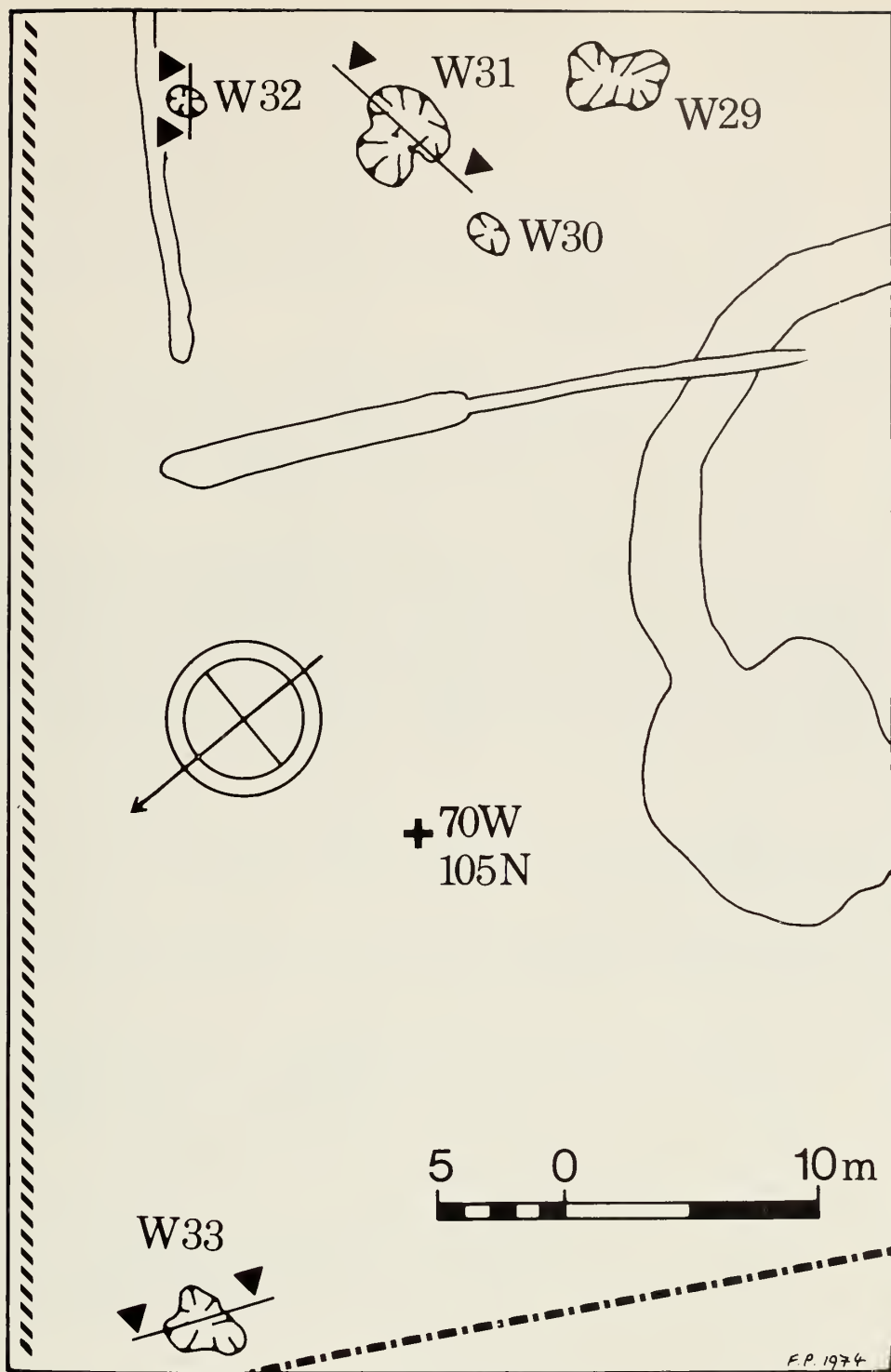


Fig. 31 Storey's Bar Road subsite, Area I, Feature Division 6: plan of features.

- W32 A small round pit; D. 0.30; Dia. 0.70; angle of sides about 45°–50°. Filling of very dark sand-silt with evenly distributed charcoal. The natural subsoil was not burned. Calcined animal bones were concentrated near the pit centre, towards the bottom (Fig. 33:section W3). Finds of Grooved Ware (Fig. 38:8–10); 2 scrapers, 20 utilized flakes; 60 waste flakes; 3 cores; and 6 pieces of irregular workshop waste. Total flint weight: 281.1 g. Radiocarbon sample HAR-409 (1860 ± 150 bc) was taken from concentrated charcoal found throughout the filling (which is almost certainly a back-filled deposit). The sample size is adequate and the date conforms with others from Grooved Ware contexts in Britain.
- W33 A large, irregular, shallow depression; W. (E-W) 3.10; L. (N-S) 3.20; D. (max.) 0.45; angle of sides 20°–35°. Filling of sand-silt with a few scattered gravel pebbles and charcoal flecks (Fig. 33:section W33). Finds include Grooved Ware (Fig. 38:11); 1 scraper; 13 utilized flakes; 56 waste flakes; 2 cores; and 1 piece of irregular workshop waste. Total flint weight: 484.4 g.

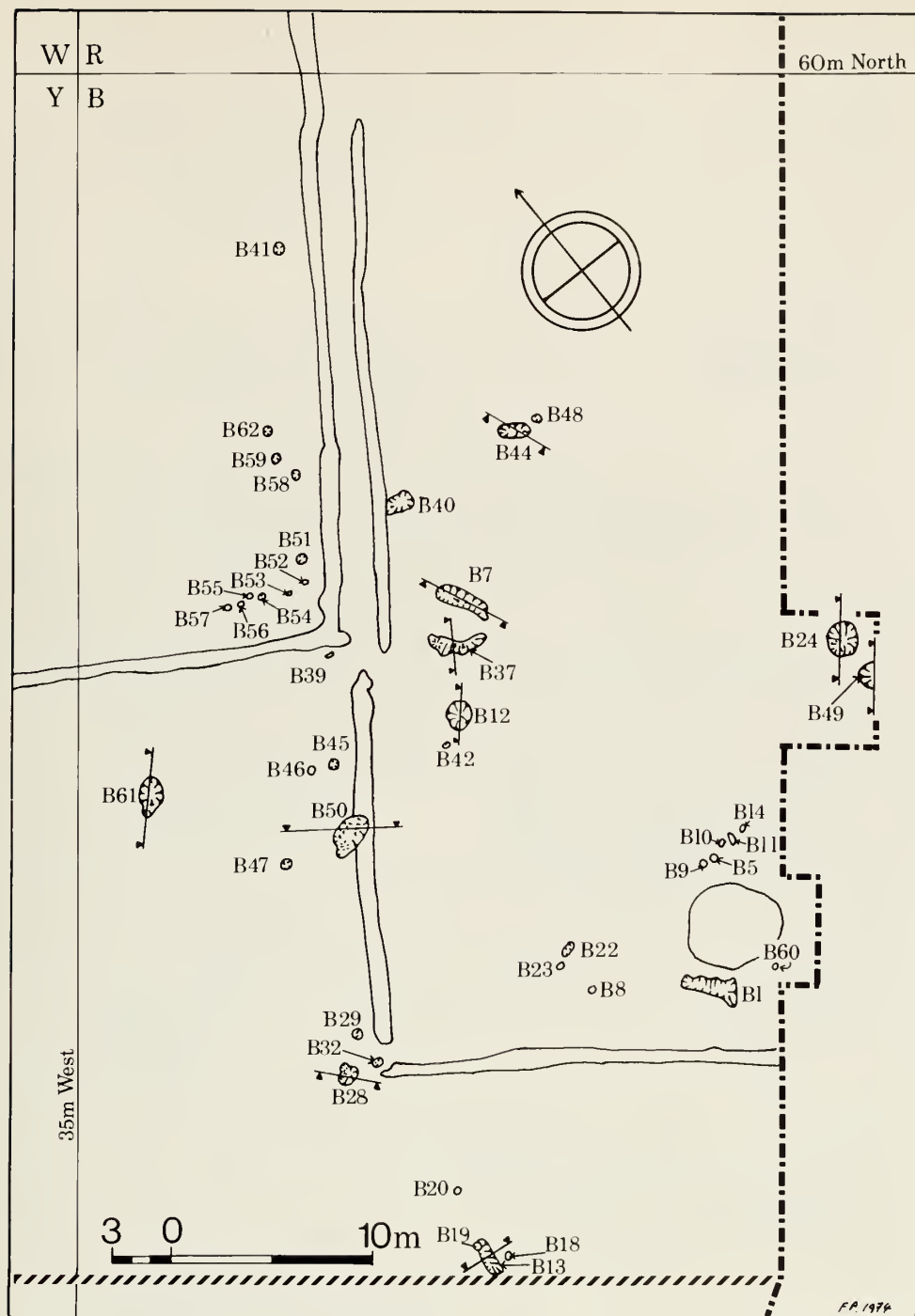
The features of Division 6 were all very similar in general form, being irregularly-shaped, shallow depressions or pits. Filling colour was distinctly darker and browner than elsewhere on the site — 10YR 3/3 and 3/4 (dark brown to very dark greyish brown) — being typical.

In sum, although the features of this Division were the most spatially separated of the positively identified Divisions (1–8), they were the most uniform morphologically.

Feature Division 7: B1, B5, B7–14, B18–20, B22–24, B28, B29, B32, B37, B39–42, B44–62 (Fig. 32)

The most important features of this Division are described individually below and sections are illustrated in Fig. 33. Features not described here are listed, with their dimensions, in Appendix 12.

- B1 An irregular, oblong shallow pit or depression; L. (NW-SE) 2.0; W. (across SE end) 1.75; angle of sides about 35°. Filling of dark brown sand-silt with gravel pebbles and charcoal flecks. Finds of plain Grooved Ware (Fig. 38:12 and 13); 6 utilized flakes; 7 waste flakes; 3 pieces of irregular workshop waste. Total flint weight: 68.5 g.
- B12 A circular depression with sloping sides (25°–45°) and irregular bottom; D. 0.15–0.20; Dia. 2.0. Filling of sand-silt (10YR 4/3) with scattered gravel pebbles and charcoal flecks (Fig. 33:section B12). Finds of 6 scrapers; 1 type C1 transverse arrowhead; 1 piercer; 15 utilized flakes; 16 waste flakes; and 3 pieces of irregular workshop waste. Total flint weight: 292.75 g.
- B24 A circular pit; Dia. 1.41; D. 0.54; angle of sides 55°–85°. Two layers were distinguished (Fig. 33):



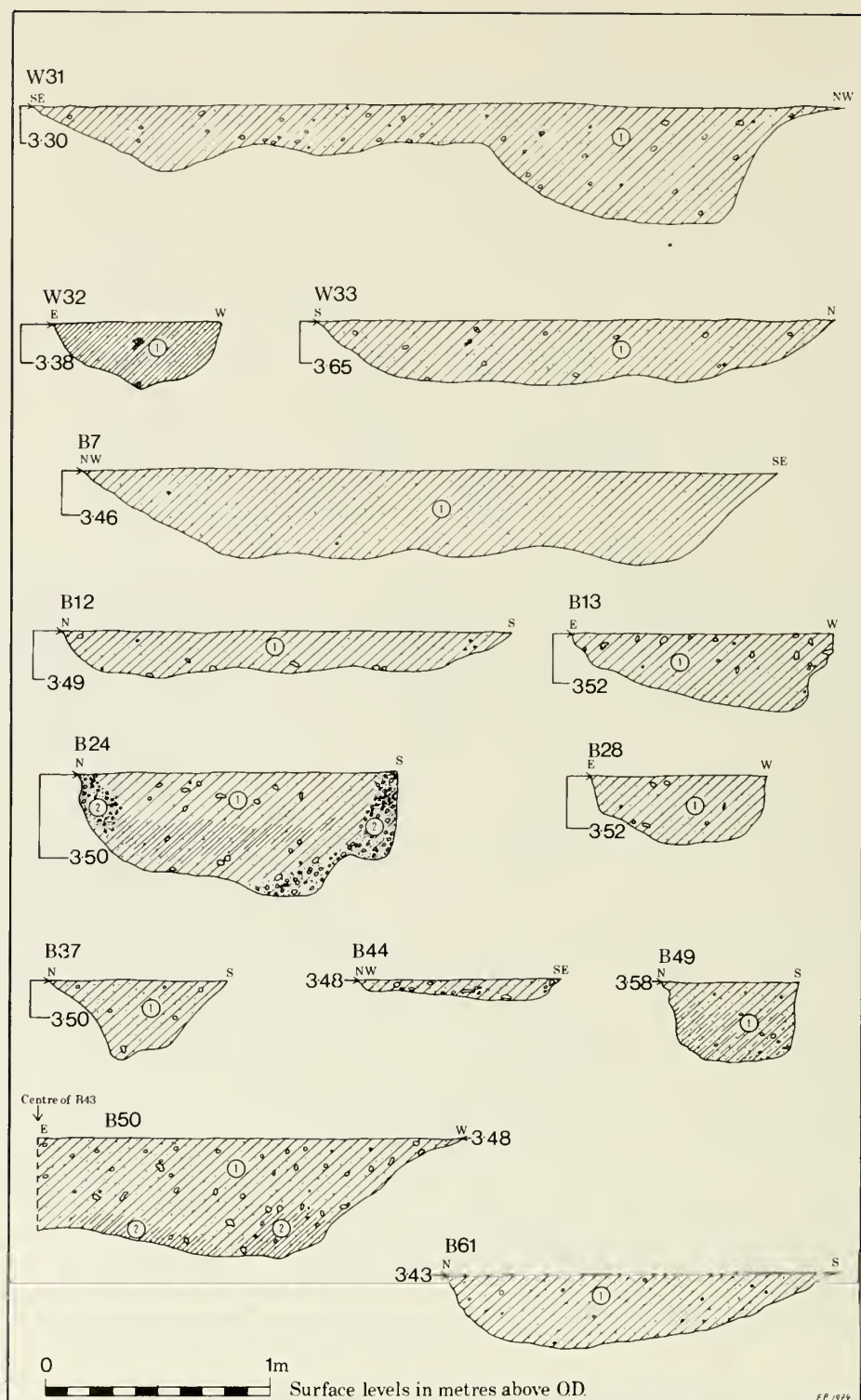


Fig. 33 Storey's Bar Road sub-site, Area I, selected sections from features of Divisions 6 and 7. Surface levels in metres O.D.

layer 1 Dark sand-silt with gravel pebbles and much charcoal, burnt stones, calcined bones, and "daub". The layer was darker towards the centre (peripheral colour 10YR 3/2). Radiocarbon sample HAR-397 (2030 ± 100 bc) was taken from the charcoal of this layer. The fresh state of the finds, especially the Grooved Ware, and the homogeneous filling suggest that layer 1 was a dumped deposit. The charcoal and the artifacts are very likely, therefore, to be contemporary. The date accords well with others from Grooved Ware sites in Britain and agrees very closely with that from B61 (see below), also of Feature Division 7.

layer 2 Pale sand-silt with gravel and a few charcoal flecks, beneath layer 1. Colour 5YR 4/4.

All the finds were from layer 1. They include Grooved Ware (Fig. 38:17–20); 21 utilized flakes; 36 waste flakes; and 22 pieces of irregular workshop waste. Total flint weight: 215.5 g.

B28 A roughly circular pit; Dia. 0.78; D. 0.31; angle of sides about 70°. Filling of very dark sand-silt with gravel pebbles, charcoal, burnt stones, and calcined flint (Fig. 33:section B28). Colour (sand-silt) 5YR 2.5/1. Finds of Grooved Ware (Fig. 38:21–25); 6 scrapers; 24 utilized flakes; 23 waste flakes; and 6 pieces of irregular workshop waste. Total weight of flint: 295.8 g.

B44 An oblong pit aligned NW-SE; L. 0.90; W. 0.47; D. 0.09. Filling of dark sand-silt with occasional gravel pebbles and much charcoal, as well as calcined flint and bone (Fig. 33:section B44). Most of the Grooved Ware pottery (Fig. 38:28–33) was confined to the centre of the pit. Flints include 1 scraper; 1 utilized flake; and 6 waste flakes. Total flint weight: 20.7 g.

B49 A circular pit, similar in size and filling to B24 nearby. Only (?) half of this feature could be excavated, as the rest lay under the spoil heaps. W. 0.60; D. 0.35; angle of sides 75°–85°. Filling of dark sand-silt with gravel pebbles, much charcoal, and many fire-cracked stones (Fig. 33:section B49). Finds of 1 scraper; 16 waste flakes; 1 serrated flake; and 11 pieces of irregular workshop waste. Total flint weight: 147.05 g.

B50 An irregularly-shaped pit opening into ditch B43. The relationship of the two features is considered in the discussion of Feature Division 1, above. Two layers were noted (Fig. 33:section B50):

layer 1 Sand-silt with gravel pebbles and charcoal flecks. Colour 10YR 4/4 (dark yellowish brown). Finds of small (undrawable) potsherds, possibly of Grooved Ware; 1 scraper; 1 type H projectile point; 4 utilized flakes; 14 waste flakes; and 2 pieces of irregular workshop waste.

layer 2 Darker sand-silt with burnt stones and charcoal. A thin layer (average thickness 0.10 m–0.15 m) lying on the bottom. Colour 10YR 3/2 (very dark greyish brown). Finds of Grooved Ware (Fig. 39:1–11); 1 scraper; 2 utilized flakes; and 28 waste flakes. Total flint weight (both layers): 144.0 g.

B61 An oblong depression or shallow pit aligned NE-SW; L. 1.32; W. 0.56; D. (max.) 0.33; slope of sides varied (25°–45°), the steepest being to the NE. Filling of sand-silt with gravel pebbles and a few charcoal flecks (Fig. 31:section B61). Finds of Grooved Ware (Fig. 39:13–19), 1 scraper; 2 utilized flakes; 3 waste flakes; 1 fabricator; and 3 pieces of irregular workshop waste. Total flint weight: 91.5 g. Radiocarbon sample HAR-399 (2020 ± 70 bc) was taken from concentrated charcoal. The filling was most probably dumped in, as the finds are fresh and there is no sign of rapid silting; the charcoal and artifacts are therefore probably contemporary. Moreover, the date agrees well with that from B24, above, and with others from Grooved Ware contexts in Britain.

The features of Division 7 are all located within the B quadrant, mainly around the droveway, but with outliers around the well B3 and with a few more to the extreme southeast. Most features are located northeast of ditch B2, and there is some doubt as to whether the features south of the ditch were originally dug by man (in the terminology used here they could be considered as ? natural). The spatial distribution of Division 7 features strongly suggests a link, perhaps both chronological and functional, with the ditches of Division 1. The absence of pits or post-holes between the two ditches of the droveway, but in an area at the centre of the Division 7 distribution, supports this hypothesis.

Feature Division 8: W18, W19, W20, W21, W22, W28 (Fig. 34 and 36)

The features in the area enclosed by the ring-ditch that did not belong with the Neolithic pits of Division 8 will be described at the end of this section.

- W18 A small, roughly circular pit with even bottom and regular sides; Dia. 1.10; D. 0.30; angle of sides 55°. Filling of very dark sand-silt with gravel pebbles, much charcoal, fire-cracked stones, and calcined bones; the natural subsoil was unburnt. Finds of Grooved Ware (Fig. 39:20–28 and 40:1–9); 1 scraper; 16 utilized flakes; 66 waste flakes; and 10 pieces of irregular workshop waste. Sieving through 1/8-inch mesh gave 9 tertiary flakes of length and breadth less than 10 mm × 10 mm. Finds were mainly distributed around the centre.
- W19 An elongated shallow depression located 0.25 east of the large pit W17; L. (N-S) 2.10; W. (E-W) 0.65; D. (centre) 0.25. Dark sand-silt filling (10YR 3/2). Finds of Grooved Ware (Fig. 40:10–11); 1 scraper; 1 type E projectile point; 6 utilized flakes; and 9 waste flakes.
- W20 A small sunken (?) hearth with gently sloping bottom; L. 0.57; W. 0.41; D. 0.11; angle of sides 45°. Filling of very dark sand-silt (5YR 2.5/1), with much charcoal (making up most of the feature's contents) and half-burnt wood. The pale sand-silt subsoil had been reddened by heat. One unburnt utilized flake was found.

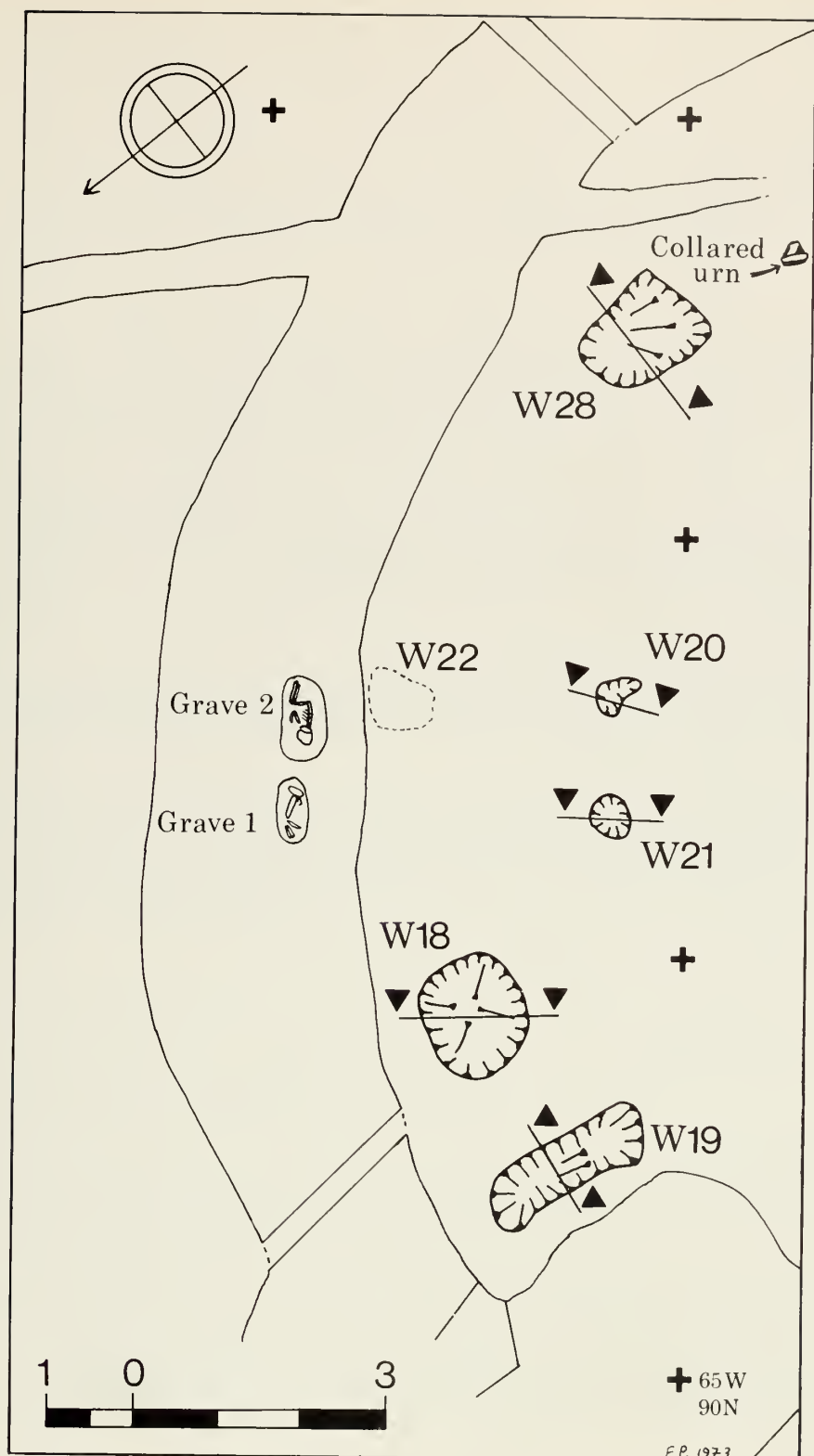


Fig. 34 Storey's Bar Road sub-site, Area I, plan of features within the northeast part of the ring-ditch enclosure.

- W21 A small hearth or burnt post-hole of circular shape; Dia. 0.28; D. 0.12. Filling of dark sand-silt and very large amounts of charcoal (as W20, above). The natural sand-silt subsoil had been reddened by heat. There were no finds. Neither W20 nor W21 produced any calcined bone, despite a careful search.
- W22 A surface scatter of charcoal and calcined bone extending 0.15 into the B/C and B soil horizons (Appendix 1), and located 0.25 SE from the S end of ring-ditch section 16; roughly oval in shape; L. (NE-SW) 1.3; W. 1.0; composed of sand-silt, a few charcoal flecks, and small fragments of calcined bone. Poorly associated finds of Grooved Ware (one sherd only, Fig. 41:28); 2 utilized, and 2 waste flakes.
- W28 A shallow oblong pit or depression aligned N-S; L. 1.37; W. (SE end) 1.0 (centre) 0.90; D. 0.18–0.15; angle of sides 35°–45°. Filling of dark sand-silt (10YR 4/4) with scattered gravel pebbles. Finds of plain Grooved Ware; 1 scraper; 5 utilized flakes; 11 waste flakes; and 1 core.

The features of this Division were all concentrated along the inside edge of the ring-ditch, towards the north. A thorough search was made for similar features outside the ring-ditch, but none was found.

POST-NEOLITHIC FEATURES (FIG. 21 AND 34)

In order to put these features in proper perspective it may be appropriate to present a very brief outline of the phases of the ring-ditch and a chronology of its associated features.

1. Digging of ring-ditch, enclosing occupation features of Division 8 (Late Neolithic Grooved Ware phase). Possible abandonment of settlement.
2. Weathering of ring-ditch, but ring-ditch remains visible. Turf forms.
3. Removal of turf from ring-ditch surface in Early Bronze Age to make barrow core. Accumulated ditch filling used for body of barrow. Deposition of Collared Urn.
4. Recut ring-ditch again weathers. Layer 2 has accumulated when graves 1 and 2 are dug.
5. Bulk of barrow gradually slips into ring-ditch as layer 1.

The cremation

An undecorated Secondary Series Collared Urn (Fig. 41:26a and b) was found at Grid 51/88 (Fig. 21). The partly crushed urn lay on its side, aligned east-west. It contained charcoal which gave a radiocarbon date (HAR-400) of 1460 ± 120 bc; charcoal for this sample was carefully selected from inside the urn, and contamination from outside can be ruled out. It also contained extremely fine flecks of calcined bone, some of which had spilled out and covered an area approximately 1 metre square. The urn lay in the centre of a shallow, irregular, oblong depression (about 0.50×0.30) sunk into the B/C soil horizon. The highest point of the vessel extended about 0.30 m above

the gravel surface of the C horizon, just 5 cm to 10 cm below the modern ploughsoil.

It is relevant here to consider the anomalous feature W22 which was placed within Division 8 on the basis of the admittedly poorly associated finds it produced. Its location within the B/C horizon, however, is similar to that of the Collared Urn. Although unidentifiable, the very fine calcined bone flecks could well be the remains of a cremation which became mixed with the surrounding soil that was rich in Neolithic domestic material.

The barrow

Direct physical evidence for the barrow is slight, but the arguments for its existence are strong and are given at length below. The main complicating factor was the opaque, homogeneous sand-silt of the B horizon (Appendix 1). Temporary B horizon balks across the ring-ditch, and the area it enclosed, revealed nothing. There was no gravel barrow make-up, no buried soil, nor any central burial platform. However, hand-scraping of the B/C horizon revealed clear, but very thin (2 mm–5 mm) turf stains in the centre of the area enclosed by the ring-ditch (Fig. 21); very slight stains were observed in grid squares 55/80, 60/80, 55/85, and 60/85. These stains consisted of short, closely-packed charcoal streaks. Although the outline of individual turves could not be discerned, the streaky marks could not have been mistaken for the illuvial zone of a podzolised earth barrow. An alternative explanation is that the turf stains could have been the remnants of a buried soil. There was no trace of a sand or gravel mound either above or around the turf stains.

The best evidence for the barrow is provided by the Collared Urn cremation (and also, perhaps, feature W22) which was located in the B/C and B horizon proper. This position, so near to the modern ploughsoil, is good evidence for the one-time existence of a barrow, into which the urn would have been sunk, or under which it would have been buried. This question is more fully discussed below.

Feature Division 9: Y1, Y2, Y7–13, R1, R5, R10, W9, W15 (Fig. 35 and 36)

The features of this division could not readily be assigned to any of the foregoing divisions. They did, however, yield a significant amount of Grooved Ware (Fig. 40:12–30 and 41:1–15) and flints. The widespread distribution of this Feature Division indicates that Late Neolithic occupation was not confined solely within the two focus areas defined by the ring-ditch, to the north, and the Division 7 features, to the south.

- Y1 A shallow oval pit aligned N-S with rounded bottom and sloping sides (angle 45°); L. 0.97; W. 0.50; D. 0.17. Filling of dark sand-silt (10YR 3/2, very dark greyish brown) with many charcoal flecks, gravel pebbles, fire-cracked stones, and artifacts. Finds of Grooved Ware (Fig. 40:23–30 and 41:1–8); 3 scrapers; 1 type H projectile point; 1

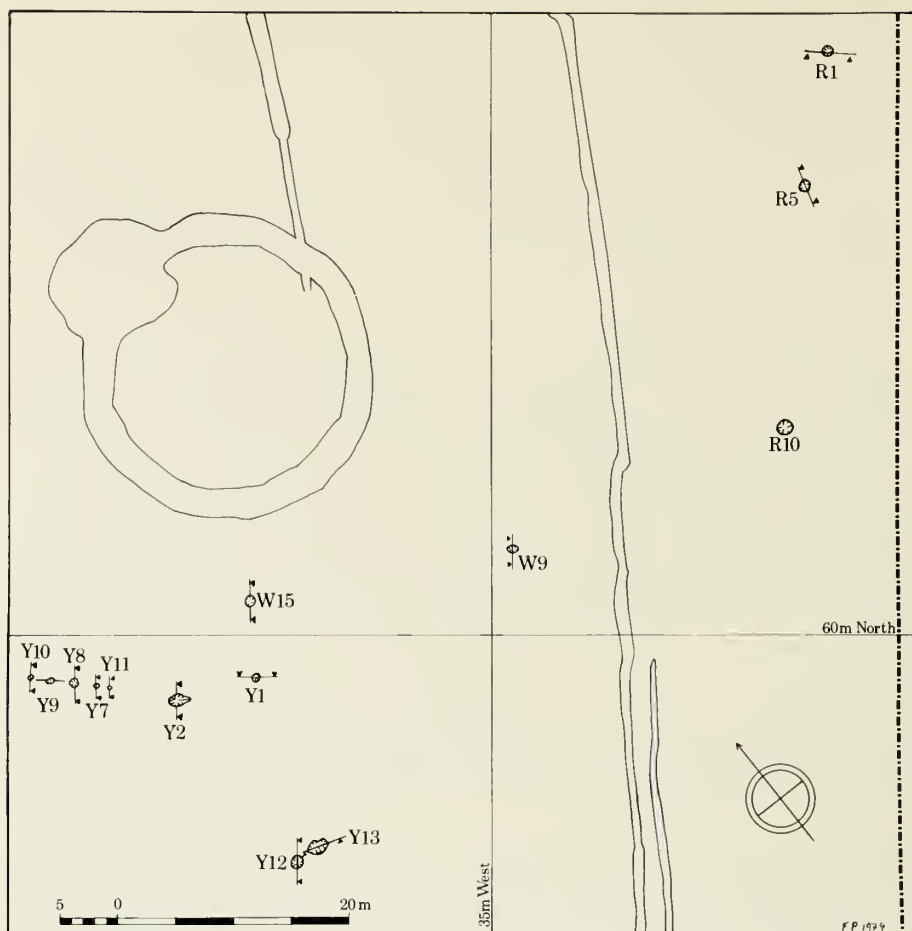


Fig. 35 Storey's Bar Road sub-site, Area 1, Feature Division 9: plan of features.

utilized type B1 core; 1 retouched flake; 8 utilized flakes; 17 waste flakes; and 1 piece of irregular workshop waste. Total flint weight: 135.5 g.

- Y2 A shallow oval pit aligned NW-SE with gently rounded bottom and sloping sides (angle 35° – 40°); L. 0.77; W. 0.48; D. 0.19. Filling of sand-silt (10YR 4/3, brown/dark brown) with gravel pebbles and charcoal flecks. Finds, mainly from the centre of the pit, of plain Grooved Ware; 1 scraper; 6 utilized flakes; 8 waste flakes; and 1 piece of irregular workshop waste. Total flint weight: 69.9 g.
- Y8 A deep circular pit, one part of a series of pits in a straight line aligned NW-SE, in the north part of the Y quadrant (Fig. 35). The other features (Y7 and Y9–11) were filled with sand-silt and a few charcoal flecks, but produced no finds. Y8: Dia. 0.65; D. 0.41; angle of sides 45° – 50° , with gently sloping bottom. Filling of sand-silt (10YR 3/3, dark brown), some gravel pebbles, and charcoal. Finds of Grooved

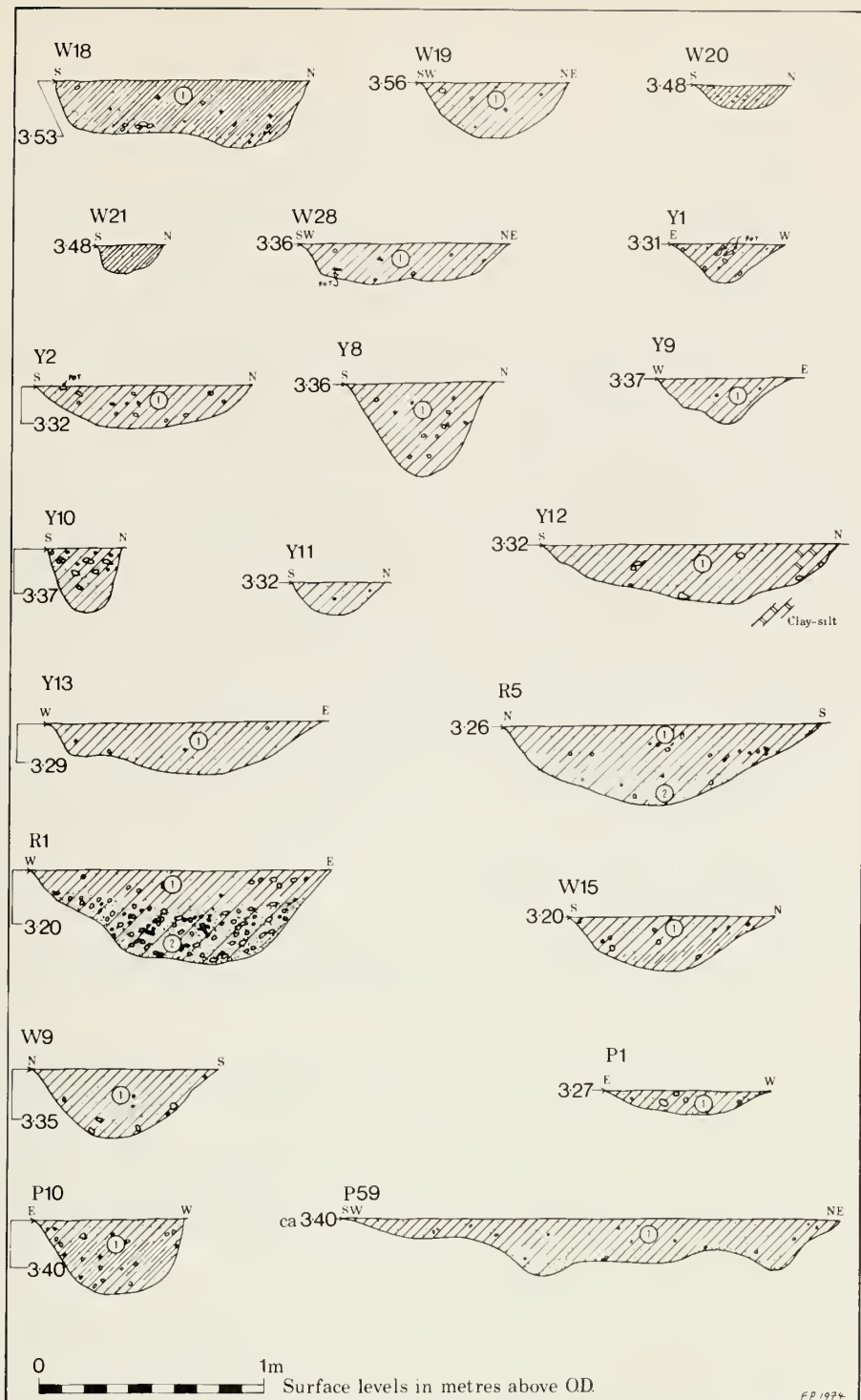


Fig. 36 Storey's Bar Road subsite, Area I and V, selected sections from features of Divisions 8 to 10 and outlying features. Surface levels in metres O.D.

Ware (1 sherd, Fig. 41:9); 1 utilized and 1 waste flake. Total flint weight: 4.2 g.

- Y12 A shallow oblong pit aligned NE-SW; L. 1.25; W. 0.70; D. 0.26; uneven bottom and irregular sides (angle 25°–45°). Filling of black sand-silt, scattered gravel pebbles, pockets of yellow clay, and a few cobblestones (Dia. 30 mm–60 mm). The subsoil was unburnt. Sieving through 1/8-inch mesh produced Grooved Ware (Fig. 41:10–15); 5 utilized flakes; 15 waste flakes; and 1 piece of irregular workshop waste. In addition 11 waste flakes of length and breadth less than 10 mm were found. The condition of the finds and the nature of the filling suggest that the pit was back-filled and that the charcoal and artifacts are contemporary. This charcoal gave radiocarbon sample HAR-404 (1930 ± 80 bc) which agrees closely with the two other dates from this Division (HAR-397 and HAR-399) and with other Grooved Ware dates from Britain.
- Y13 An irregular, roughly oblong shallow pit aligned E-W; L. 1.30; W. 0.83; D. 0.23; very uneven bottom and sides (angle 25°–60°). Filling of pale sand-silt with gravel pebbles and occasional iron-pan. Finds of 4 waste flakes (1 calcined) and 1 utilized flake. Total flint weight: 9.0 g.
- R1 A circular pit; Dia. 1.30; D. 0.42; flat bottom and steep sides (45°–55°). There were two layers:
layer 1 consisting of dark sand-silt and charcoal flecks.
layer 2 consisting of sand and gravel with sand-silt.
Finds (all from layer 1) of Grooved Ware (Fig. 40:12–13); 1 chopper/adze (weighing 133.1 g); 3 utilized and 6 waste flakes. Total flint weight: 162.5 g.
- R5 A circular pit of open U-profile; Dia. 1.40; D. 0.35; angle of sides about 35°. There were two layers:
layer 1 consisting of dark sand-silt.
layer 2 consisting of pale sand-silt with gravel. The interface of layers 1 and 2 was not clear. Layer 2 produced many animal bones. Finds (all from layer 1) of Grooved Ware (Fig. 40:14–19); 5 utilized and 3 waste flakes. Total flint weight: 31.9 g.
- R10 A very shallow depression, roughly circular; Dia. about 1.0; D. 0.05–0.10. Filling of sand-silt. Finds of 1 scraper; 1 utilized and 3 waste flakes. Total flint weight: 12.8 g.
- W9 A small oval pit of open U-profile; L. (E-W) 1.20; W. 0.85; D. 0.30; angle of sides 45°. Filling of sand-silt (10YR 3/3, dark brown) becoming darker towards the bottom, where charcoal and burnt stones were found. Finds of Grooved Ware (Fig. 40:20–22); 2 utilized and 4 waste flakes. Total flint weight: 16.3 g.
- W15 An oval pit of open U-profile; L. (NE-SW) 1.0; W. 0.78; D. 0.24; angle of sides 35°. Filling of sand-silt with a few gravel pebbles (10YR 3/3, dark brown). Lens of charcoal and burnt stones, etc., near bottom of filling; the natural subsoil was not burnt. Finds of 3 utilized flakes; 5 waste flakes; and 2 pieces of irregular workshop waste. Total flint weight: 95.7 g.

Feature Division 10: P1–3, P5, P6 (Fig. 5 and 36)

The features of this Division cannot be traced more than 15 metres northeast of ditches W23 and R2. Their distribution is shown in Fig. 5 and a representative section (P1) is shown in Fig. 36.

- P1 A small (?) natural pit or silt patch, vol. 66,000 cm³. Filling of sand-silt with a few gravel pebbles and small cobblestones. Colour 10YR 4/4 (dark yellowish brown). Finds of Grooved Ware (Fig. 41:16–22); 5 utilized flakes; 43 waste flakes; and 26 pieces of irregular workshop waste. Total flint weight: 79.2 g. Although the hollow itself may be natural, the filling is clearly not so.
- P2 A small silt patch, vol. 22,000 cm³. Filling of sand-silt with a few gravel pebbles. Colour 10YR 4/2 (dark greyish brown). Finds of 3 waste flakes. Total flint weight: 11.9 g.
- P3 A silt patch, vol. 418,000 cm³; D. 0.30. Filling of sand-silt with a few gravel pebbles and small cobblestones. Colour 10YR 4/3 (brown/dark brown). Finds of Grooved Ware (Fig. 41:23–24); 2 type A (ii) scrapers; 1 type H projectile point; 1 utilized and 13 waste flakes. Two flakes smaller than 10 mm × 10 mm were also found. Total flint weight (excluding small flakes): 96.9 g.
- P5 A silt patch, vol. 308,000 cm³; D. 0.20. Filling of sand-silt and a few gravel pebbles; charcoal flecks below 0.10. Colour 10YR 3/3 (dark brown). Finds of plain Grooved Ware (1 sherd); 2 utilized flakes; 8 waste flakes; and 2 pieces of irregular workshop waste. Two flakes smaller than 10 mm × 10 mm were also found. Total flint weight (excluding small flakes): 40.5 g.
- P6 A silt patch, vol. 198,000 cm³. Filling of sand-silt with a few gravel pebbles. Colour 10YR 3/2 (very dark greyish brown), slightly darker than other features of the Division. Finds of Grooved Ware (Fig. 41:25); 8 waste flakes; and 9 pieces of irregular workshop waste. Six flakes smaller than 10 mm × 10 mm were also found. Total flint weight (excluding small flakes): 24.0 g.

The features of Division 10 were grouped together largely on grounds of spatial distribution. Features P10 and P9, which had many points in common with each other, were not included in the Division, both because they lacked pottery and because of P10's radiocarbon date (HAR-770 2510 ± 130 bc) which is significantly early.

The filling of Division 10 features was considerably paler than that found in features of nearby Division 6. Charcoal was even rarer and burnt subsoil was not found. Division 10 features were also much shallower and slighter than those of Division 6, and their density of finds was much lower. It would be difficult to classify the very irregularly shaped features of Division 10, since they were clearly neither post-holes nor storage pits. Accordingly, they are simply termed "silt patches", and their function, if any, must await future research.

Outlying features: P9, P10, P59 (Fig. 5 and 36)

These three northerly features could not be accommodated within the standard Feature Division system.

- P9 A silt patch, vol. 308,000 cm³. Filling of sand-silt with a few gravel pebbles and rare charcoal flecks. Colour 10YR 3/3 (dark brown). Finds of 11 waste flakes and 5 pieces of irregular workshop waste. Total flint weight: 34.2 g.
- P10 A small circular pit; Dia. 0.62; D. 0.33. Filling of sand-silt with much charcoal between 0.10 and 0.20. Colour 10YR 3/2 (very dark greyish brown). Finds of a large and varied flint industry (Table 40) and a few burnt animal bones. The fresh condition of the finds and the homogeneous filling argue that the feature was back-filled. Radiocarbon sample HAR-770 (2510 ± 130 bc) was taken from concentrated charcoal and proved slightly smaller than the size preferred by the laboratory. The flints are typical of the Late Neolithic period and the date is slightly earlier than expected.
- P59 A shallow pit; L. 2.20; W. 1.90; D. 1.25. Filling of sand-silt and a few gravel pebbles; much charcoal, too dark for a Munsell test. The distinction between the natural sand-silt and the filling was very vague. Fig. 42 shows all the drawable sherds, which are of Grooved Ware. The flints are listed in Tables 44 to 47. One small, damaged, calcined bone piercer was also found (p.152). Concentrated charcoal gave a radiocarbon date (HAR-771) 2010 ± 70 bc which agrees well with other filled-in Grooved Ware pits on the site (HAR-397, HAR-399, HAR-401, HAR-404, and HAR-409, see Appendix 13).

Feature P59 was discovered by chance during tests to determine how much damage had been done by recent cable-laying operations. Although, of course, we cannot be sure that there are no more features in its immediate vicinity, there are grounds to doubt whether P59 ever formed part of a larger settlement. Fig. 4 shows that Areas I, II, and III almost surround the test trench, V, in which the feature was found. Furthermore, excavations in 1971 (FNG 1:fig. 3, Areas V, X, and XI) cleared contiguous parts of the Padholme Road subsite, to the north. With the exception of the settlement considered at length in this report, none of the surrounding excavated areas has yielded features or finds that could be associated with P59. Unless, therefore, its settlement once lay beneath the garage buildings (Fig. 4) to the northeast, it must be assumed that P59 is an isolated feature.

Phasing and Chronology of the Features

Fengate, like most British prehistoric rural settlement sites, offers only limited vertical stratigraphy. Stratigraphic information must, therefore, be supplemented by radiocarbon dates and by a close study of the spatial distribution of both features and finds.

The Late Neolithic/Bronze Age settlement was a large one, and its phasing is best considered under three separate headings: (a) the ring-ditch and associated features, (b) the linear ditches and associated features, and (c) pits, post-holes, and associated features.

The Ring-Ditch and Associated Features

An excellent parallel for the events described below is provided by the marsh-side settlement at Playden, Sussex which has been reinterpreted by Richard Bradley in Appendix 10.

The density of the finds in the Division 1 linear ditches dramatically increased as the ring-ditch was approached (Fig. 14), suggesting that there must have been Late Neolithic occupation in the area. It was also observed that the density of the finds in the naturally accumulated filling of the large pit W17 was much greater towards the edge nearest the ring-ditch enclosure (Fig. 29). The density of the finds in the length of the ring-ditch linking linear ditch W24 to the large pit was also high (Fig. 21), suggesting a one-time spatially continuous settlement which was located, to judge by the W17 finds distribution, in the ring-ditch enclosure. These observations were supported by the discovery of the refuse-filled Late Neolithic pits of Division 8 and by the absence of similar features immediately outside the ring-ditch.

In order better to understand what follows, brief consideration must be given here to the maintenance of gravel-cut ditches. Presumably the sides of such ditches were as prone to erosion in Neolithic times as they are today. They must, therefore, have required almost constant attention. If this was the case, then the absence of clean gravel slips in any of the settlement ditches might readily be explained, by suggesting that after repeated, perhaps seasonal, maintenance recuts, the original gravel upcast would have become thoroughly mixed with topsoil. It is known, from the presence of perfectly preserved organic material at the very top of the modern permanent water table, that the Late Neolithic water table was at least as high as, and probably higher than, that found today. The ring-ditch was dug to a depth just 30 cm above the modern water table, and it would not have been possible to maintain it, had it been dug any deeper.

If the ring-ditch was a place of importance, as the features found within it and its shape suggest, then it was probably maintained regularly. However, once the maximum depth had been attained, maintenance would still have had to continue, except that clean gravel would no longer have been dug. Gradually, as years went by, and as maintenance continued, the material that slipped into the ditch would have become increasingly loamy. The ring-ditch, then, could have been constantly maintained while the settlement it enclosed was occupied. When the settlement was abandoned the ring-ditch would have begun to weather and, in the process, would have accumulated silty topsoil that was rich in Late Neolithic occupation debris. Direct evidence for this phase however, was removed in the Early Bronze Age when the softer soil of the ring-ditch filling was excavated to provide a central barrow. During this major recut, a Collared Urn sherd (Fig. 37:29)

was lost in primary contexts at the very bottom of the ditch. From this stage on, the Fengate ring-ditch sequence bears a striking resemblance to that at Latch Farm, Hampshire, a site also situated on gravel (Piggott 1938).

There is slight evidence that the barrow was constructed with a turf core (p. 53), but the absence of clean or even silty gravel anywhere in the ring-ditch area strongly argues that the body of the mound was built of a much more silty material. In this case, it is suggested that ultimately Late Neolithic topsoil from the ring-ditch filling was used. If this soil was like that found in the topsoil-derived filling of the shallow Division 1 ditches, or indeed, in the upper layers of the large pit W17 or well B3, then it would be almost indistinguishable from the sand-silts of the overlying, ubiquitous B soil horizon.

The Collared Urn cremation, which extended well into the B horizon, was found at a higher soil level than any other feature of the settlement. There can be little doubt that this singular position would have been impractical without the protection afforded by an overlying barrow. The urn's contents, some of which had spilled out and partially sealed the Division 8 pit W28, gave a C-14 date (HAR-400) of 1460 ± 120 bc. This is 400 to 500 radiocarbon years younger than those from pits of the Late Neolithic settlement. It is probable, therefore, that a considerable quantity of soil had accumulated in the ring-ditch by Early Bronze Age times, certainly enough to construct a substantial barrow.

The single urn sherd found on the ring-ditch bottom and the complete Collared Urn which contained the cremation are very similar, and there is no reason to doubt their broad contemporaneity. It is probable, then, that the ring-ditch was cleaned out and the cremation deposited at much the same time. There was no sunken central "primary" burial, nor is there any evidence in the form of scattered urn sherds for "secondary" burials in the body of the mound. Although the peripheral location of the Collared Urn cremation might suggest otherwise, it appears on the present evidence that the cremation was more "primary" than "satellite". The apparent absence of a central "primary" grave or cremation is, however, of some interest (Petersen 1972). It is difficult to avoid the subjective impression that one Collared Urn and one possible urnless cremation (feature W22) hardly provided sufficient justification for such a substantial earthwork unless part of it, in this case the ring-ditch, already existed *by* the Early Bronze Age.

Following the completion of the barrow, the ring-ditch was again allowed to weather and layers 2 and 3 had largely accumulated by the time graves 1 and 2 were dug. The weathered late Beaker sherds in the grave filling provide a *terminus post quem* for the digging of the graves.

Fig. 21 shows that finds, almost all Late Neolithic, were more frequently encountered towards the top of the ring-ditch filling. At the same time, an Early Bronze Age Collared Urn sherd was found on the ditch bottom. This inversion is best explained if we suppose that the barrow was built of topsoil rich in Neolithic occupation debris, and as the mound weathered, so it slipped into the recut ring-ditch on top of an Early Bronze Age rapid silt. Therefore the bulk of ring-ditch layer 1 is composed of Late Neolithic topsoil, an argument that gains support from the distribution of finds in the

southwest part of the ring-ditch, where residual occupation debris was not so concentrated or disturbed as to obscure the picture. Between sections 21 and 10 there is a clear tendency for finds to be located near the ditch's inner edge and there are very few finds below 0.50 m. Moreover, 82 per cent of the flints found in the sieved "control" section came from layer 1. It is probable that layers 2 and 3, as their more pebbly composition suggests, include much material derived from the natural gravel of the ditch walls. It is notable that these pebbles are spread evenly throughout the ditch filling which would argue against there being a large gravel barrow within the ring-ditch enclosure; rather, layers 2 and 3 show that both walls of the ring-ditch contributed to its initial filling.

It is probable that there was a brief period when the natural process of weathering slowed down. This was perhaps when the gravel subsoil's angle of rest was approached, somewhere near the top of layer 2. Accumulation of layer 1 was initiated or renewed once the outward creep of the barrow soil had reached the ring-ditch. Evidence for such a pause is provided by the homogeneous, stone-free, finer particles of the silt deposit at the interface of layers 1 and 2, between sections 1 and 6 (for example, Fig. 22:sections 2 and 4).

It would be unwise to speculate on the form the barrow might have taken. On the one hand, the peripheral position of the Collared Urn argues for a wide, perhaps bowl-like barrow; on the other hand, the location of the large pit W17, and the observed pause in the filling sequence, suggests the presence of a berm. It is also possible that the barrow could have been eccentrically located within the ring-ditch.

There is no evidence to suggest that the barrow was deliberately flattened as Piggott (1938) suggested happened at Latch Farm. Rather, the evidence, such as it is, points to a slow process of outward creep through the agencies of wind, rain, frost, and earthworms. If the barrows at Fengate or Latch Farm were indeed levelled, there should be a good reason for such laborious work, and none is apparent. The hypothetical labourers must also have been scrupulously tidy, for they left no debris behind them and at Fengate there is a large Iron Age settlement just 90.0 m to the northeast. Also, at Latch Farm there is a marked contrast between the gravel of the *in situ* barrow and that of the "throw down" at the top of the ring-ditch filling (Piggott 1938:172). This surely argues for a slow process of weathering (involving admixture with topsoil through worm action), rather than a deliberate, rapid destruction. Absence of obvious bedding-planes and an even, homogeneous filling (Piggott 1938:172) is to be expected under such circumstances. It would also have been strange, had the Latch Farm barrow been deliberately flattened, for the work not to have been completed. At the time of its excavation, the mound still survived 18 inches (0.46 m) high (Piggott 1938:169).

At Fengate there is evidence that the slow accumulation of ring-ditch layer 1 had already started when the small southerly extension to W24 was cut through it. This event took place, as we shall see below, almost certainly well before 1000 bc, so that the weathering of the barrow was probably quite a rapid process.

Finally, the significance of the large pit W17 remains to be considered. In the description of this feature it was noted that the point of origin for its expansion appears to have been the ring-ditch. It is suggested below that so large a pit was probably a quarry, dug to extract gravel over many years. Bearing this in mind, it is perhaps reasonable to suppose that its first use was at the time of the Late Neolithic settlement. Radiocarbon date HAR-406 (1340 ± 80 bc) indicates that it was still open after the deposition of the Collared Urn, and there is no evidence that it was deliberately back-filled after that time, or indeed at any time. The palaeobotanical evidence suggests that the pit developed into a reed-filled, stagnant pond (Appendix 3) which remained open, gradually filling with vegetation and fine topsoil throughout most of the Bronze Age. This view is supported by two radiocarbon dates (HAR-407 720 ± 90 bc and HAR-786 850 ± 80 bc) taken from twigs in layer 5.

The Linear Ditches (Division 1) and Associated Features (Fig. 6, 11, 13, and 18)

The rectilinear layout of the linear ditches is such that they can be seen to form part of the same system. Their filling consisted of almost uniform sand-silt with occasional gravel pebbles in which it was not possible to observe changes in the vertical stratigraphy.

PHASE 1

It is suggested, for reasons that will soon be apparent, that the shallower and less regular part of the ditch system south of the "kink" in R21 at grid reference 24/75 dates to the first phase of the settlement. In common with the rest of the system, the finds from these ditches are composed of Grooved Ware and associated later Neolithic flint. The small pits of Division 7, as we have seen, cluster around the southern part of the driveway and also around the B2/43 corner entranceway and the well, B3. The distribution of finds within the upper levels of the well B3 tends to confirm the hypothesis that the driveway area was a significant focus of settlement. Furthermore, with the exception of a few shallow hollows, occupation appears to have been largely confined to the enclosed land northeast of ditch B2. Excavation in 1974 of the new area southwest of the 1973 limits confirmed that the later Neolithic occupation did not extend further south.

It is probable that the driveway was laid out as an integral part of the Phase 1 ditch system, since the southwest-northeast ditch B43 is aligned with the centre of the driveway, and not with ditch B21, as might otherwise be expected. This hypothesis is supported by the similar density figures for the finds and by the similar profiles of both drove ditches. In sum, it is suggested that the features of Division 7 are contemporary with Phase 1 of the linear ditch system. The proximity of the well to the driveway should occasion no surprise; indeed, it would seem possible, if not probable, that the well was first dug and lined during this phase.

At some indeterminable time after the initial construction of the Phase 1 ditch system, the ditches north of the “kink” in R21 were either dug *de novo*, or else radically enlarged and straightened. On balance, since the northerly ditch (R2) runs so precisely parallel to its southern counterpart (B2), it would seem probable that Phase 2 involved substantial recutting rather than construction from scratch. If Phase 2 did in fact represent a completely new extension of the system, it is very surprising that an intermediate northwest-southeast ditch, parallel to and between B2 and R2, was not found.

The layout of the Phase 2 ditches, when examined closely, can be seen to support the hypothesis that an earlier system was followed, at least in part. The corner entranceway formed by the ditches R21 and R2 is aligned northeast-southwest, in exactly the same way as its southwesterly counterpart between B43 and B2. It would seem probable that, in addition to recutting ditches R21 and R2, it was decided to extend the system to the northwest by means of ditches W24 and W23/R4, in order, perhaps, to take in the east part of the ring-ditch. The argument for a separate northwest extension finds support from the eccentric arrangement of gaps around the junction of the three ditches R2, R4, and R21 prior to the construction of the obviously later north-south blocking ditch at the north end of R21. If the pattern observed at the south of the driveway (where ditch B43 is placed at the driveway centre), had been repeated, as might well have been the case if Phase 2 ditches had been dug in one step, then ditch R21 should, in theory, line up with the centre of the gap between ditches W23/R4 and R2. As it is, the off-centre alignment stands out in this otherwise very regular layout (Fig. 13).

It has been suggested, then, that the northwest enclosure was added to the Phase 2 system in part to make use of the ring-ditch. In this regard, it should be noted that the northwest enclosure's north entranceway between ditches W24 and W23 is aligned northwest-southeast, in contrast to the original northerly entranceway of the southeast enclosure which was aligned northeast-southwest (the gap referred to is between ditches R2 and R21). Furthermore, ditch W24 is extended slightly north of ditch W23, so there can be little doubt that the north entranceway of the northwest enclosure was intended to face northeast, towards the open ground. If the north entrance was indeed intended to serve the open land to the northeast, then the gap between the ring-ditch and the deep part of W24 was undoubtedly intended to serve the northwest, which might otherwise not have had direct access to the enclosure system. The tangential alignment of the deep portion of W24 on the rather straight section of ring-ditch, approximately between sections 15 and 11 (Fig. 21), must be intended to make the maximum use of the latter feature. It would be difficult, otherwise, to account for the very short substantial length of ditch W24, which runs so perfectly parallel to the long ditch R21, unless some use was made of the ring-ditch. The situation south of the ring-ditch was unfortunately obscured by the heavy erosion of the silty natural subsoil in this, the lowest part of the site.

The features of Division 6, four-fifths of which are confined within the westerly enclosure, are probably contemporary with Phase 2. If the initial construction of the ring-ditch dates to this period, then it would be reasonable to place the Grooved Ware features of Division 8, enclosed by the ring-ditch, within this phase as well. Their concentration so near the northwest entranceway of the northwest enclosure (between the ring-ditch and the southern part of the substantial section of ditch W24) supports this hypothesis. Finally, the very thin scatter of features immediately northwest of the Phase 2 linear ditches provides general support for the suggested contemporaneity of these ditches with the features of Division 6, and perhaps, 9.

Radiocarbon dates for features associated with Phases 1 and 2 of the linear ditch system do not give clear statistical grounds for supposing that there was any significant lapse of time between them; Phase 1 features B24, B61, and, perhaps, Y4: 2030 ± 100 bc, 2020 ± 70 bc, and 2010 ± 90 bc (HAR no.-397, -399, and -401 respectively). The only date available for a probable, rather than possible, Phase 2 feature is that for W32, Division 6, namely, 1860 ± 150 bc (HAR-409).

Phase 2 closes with the abandonment of the ring-ditch settlement.

PHASE 3

This phase sees the construction of the barrow, the deposition of the Collared Urn cremation, and, probably, but not certainly, the digging of the two children's graves, 1 and 2, in the partially silted-up ring-ditch. Phase 3 is represented in the linear ditch system by the insubstantial southwesterly extension of ditch W24 which was cut through layer 1 of the ring-ditch. At this stage the ring-ditch had begun its slow final silting, so W24 no longer had to follow the tangential alignment of Phase 2. Accordingly, the southwesterly extension was cut in a more-or-less straight line but, significantly, some 10 degrees off the original alignment. The disturbed filling of the ring-ditch at section 15 (Fig. 23) might represent back-filling associated with the construction of the W24 extension. It should be remembered that the southwest end of W24 gradually disappeared and may well have continued into the disturbed areas to the south.

Finally, attention should again be drawn to the gradual, but highly significant increase in the concentration of finds along ditch W24 as it approached the ring-ditch. The density of the finds increases even as the ditch decreases in size (Fig. 14). Again, the finds are distributed evenly throughout the ditch filling, suggesting that they originally derived from the Phase 2 topsoil that slipped into the Phase 3 extension.

Pits, Post-Holes, and Associated Features

PHASE 1

The phasing used in this section follows that of the previous section. It has

been noted that the features of Division 7 are most probably associated with the southerly linear ditches of Phase 1, and it was also tentatively suggested that the initial construction of the well, B3, might have taken place at this time. The C-14 date from the pit Y4 (HAR-401 2010 ± 90 bc) agrees so well with those quoted above from the Division 7 pits B24 and B61, that it is very tempting to include it too, with the features of this phase; certainly its location would not conflict with this view.

PHASE 2

It surely would not be difficult to accept that there was occupation, represented by the pits of Division 8, in the ring-ditch enclosure during the Late Neolithic period; but it has been suggested that many supposed "settlement" features found inside ring-ditches may be the remains of ritual deposits of soil or household debris (Case 1969a:193). This hypothesis, however, cannot account for the gradual increase in the density of finds, as the ring-ditch is approached, unless, of course, the rites also involved the broadcast sowing of rubbish around the "sacred" area.

It will be argued below that the shallow pits of Division 6 are functionally related to the ring-ditch settlement and if this is so, then they too, must belong to Phase 2. Their northerly distribution and the single radiocarbon date (HAR-409 1860 ± 150 bc) generally support this suggestion. Again, spatial distribution immediately north and west of the two rectilinear enclosures argues that the few pits of Division 10 might also belong to this phase. The more spatially separated features of Division 9 are difficult to place in a chronological scheme. In general, they tend towards the north and west, and, as such, might be considered to belong to Phase 2. The single radiocarbon date from pit Y12 (HAR-404 1930 ± 80 bc) again does not conflict with this view. Our excavations of Area II (Fig. 4) did not reveal any Late Neolithic features, so that it can be assumed that the pits of Division 9 did not spread far west of the two main enclosures.

The Chronology and Growth of the Settlement

The phases for the settlement as a whole, as summarized below, follow those of the linear ditches of Division 1, discussed above. These ditches traversed the whole settlement and were the sole means of uniting such widely separated features as the well and the ring-ditch.

PHASE 1

Division 7 features were in use, and perhaps also pit Y4 and the well, during its initial construction. The southeast rectilinear enclosure, as defined by Division 1 ditches B2, B43, B/R21, and R2, and the driveway were laid out and were in use. Relevant radiocarbon dates (Appendix 13): 2030 ± 100 bc (HAR-397); 2020 ± 70 bc (HAR-399); and 2010 ± 90 bc (HAR-401).

PHASE 2

The Division 1 ditches, defining the southeast rectilinear enclosure were deepened northeast of the “kink” in R21. The northwest enclosure was added: it incorporated the ring-ditch by forming an entranceway defined by the ring-ditch and the southwest end of the original, substantial length of ditch W24. The Division 8 settlement, and the ring-ditch encircling it belong to this phase, as do the shallow pits of Division 6. The large pit W17 may have been started in this phase. The isolated features of Divisions 9 and 10 probably belong in Phase 2. The beginning of Phase 2 probably overlapped to a great extent with Phase 1. It ended with the abandonment of the ring-ditch settlement. Relevant radiocarbon date (Appendix 13): 1860 ± 150 bc (HAR-409).

PHASE 3

The field or enclosure system continued in use, largely unchanged, although permanent settlement appears either to have moved elsewhere or to have changed in such a way as to leave no archaeological trace. The ring-ditch silted up. It was still visible in the Early Bronze Age when it was cleaned out to provide material for a barrow. The Collared Urn cremation (HAR-400: 1460 ± 120 bc) was deposited in the barrow at about this time. The ring-ditch again silted up. The large pit W17 was still open at this stage (HAR-406: 1340 ± 80 bc). Two children were buried in graves 1 and 2 which were cut through the partially-accumulated ring-ditch filling. The phase closed with the cutting of the slight southwesterly extension of ditch W24 through the ring-ditch filling.

PHASE 4

The final event of Phase 3 indicates that the field system was still in use after the Early Bronze Age; but the very slight dimensions of the W24 extension suggest that the nature of that use might have changed (Chapters 6 and 7). It would be reasonable to suppose that the fields went out of use at approximately the same time that the well was abandoned (HAR-398 : 1050 ± 70 bc). By this time the large pit W17 had accumulated a considerable depth of deposit and was probably no more than a shallow, stagnant pond (HAR-407: 720 ± 90 bc and HAR-786: 850 ± 80 bc). The abandonment of the field system, as represented by HAR-398, corresponds very well with the abandonment of the extensive Bronze Age enclosures of the Padholme Road and Newark Road subsites, 120 m northeast of the settlement described in this report (Pryor 1974d and 1976).

In closing this summary it should be noted that the four phases outlined above reflect gradually changing patterns of land use and management. They are in no way comparable to the phases of occupation observed on urban sites, where subphases may deal with periods of considerably less than one generation. At Fengate, the position is far less clear-cut. We have no idea, for example, to what extent Phases 1 and 2 overlap, nor are we at all

certain about the nature of the Phase 4 "occupation". It is, however, becoming clear that on the Fen-edge, where the economy was more directly determined by the peculiar local environment than perhaps elsewhere in the country, field systems and other features directly linked to the processes of food production remained substantially unchanged for long periods of time, provided, that is, the Fens nearby remained stable.

It is argued here that the linear ditch system of Division 1 and the ring-ditch were originally constructed and used by Late Neolithic communities, probably in two phases. At the end of Phase 2 the settlement pattern altered, causing the ring-ditch to be abandoned. The field or enclosure system, however, continued in use after the Early Bronze Age. This suggests that the original Neolithic system was in use for a minimum of 400 radiocarbon years. A more realistic estimate, based on the span of time between Phase 1 features of Division 7 and the final collapse of the well B3, is nearer a radiocarbon millennium.

The settlement also provides evidence that one feature, the ring-ditch, was not only "in use" for some 400 years, but changed its role from a purely utilitarian function to a funerary monument.

It has been suggested above (p. 66) that the Phases 1 and 2 Grooved Ware settlement apparently "moved elsewhere". This "move", however, might involve shifting only a few hundred metres, probably in the direction of the Fens, since the land to the northwest was proved to be sterile by previous excavation. Alternatively, settlement relocation could have involved moving much greater distances, probably on a permanent basis. If this hypothesis is accepted, however, it would be very difficult to account for the apparently uninterrupted maintenance of the, by then, relict field system over so long a period. A third, more reasonable, suggestion is that the post-Neolithic way of life gradually altered in many respects that have left no obvious trace in the archaeological record. Such changes might have involved an even greater reliance on livestock, coupled with a less settled pattern of existence, where nodal occupation sites of the type discussed at length in this paper occur less frequently. This hypothesis receives support from the botanical reports of Appendices 3 and 6 which show an open, treeless environment with weeds of occupation during, presumably, Phase 4. Had the settlement been completely abandoned at the close of the Neolithic period, one would have expected a marked recovery in the forest cover, rather than the maintenance of open countryside.

A hint of such change is provided by the very slight Phase 3 extension to the much more substantial Phase 2 ditch, W24. Perhaps during Phases 1 and 2 hedges either sprang up or were planted along the line of the Division 1 ditches, which would then not have required maintenance. They would then have rapidly filled up and this would explain the absence of post-Neolithic finds in features that were obviously in use after that period. The slight extension to W24 might perhaps be a hedge-bedding trench, or something of the sort. Indeed, Dr. M. D. Hooper of the Nature Conservancy Monkswood Laboratory has shown many modern hedges to be hundreds of years old, and there can be no reason to doubt that this may also apply to ancient hedges. The "occupation" of Phases 3 and 4, therefore, most

probably represents the use of an old field system many generations after the folk who originally constructed it had died.

It has been informally suggested that the linear ditches of Division 1 might represent the remains of Iron Age "Celtic" fields. Excavations in 1974, however, revealed many Iron Age settlement features, including two circular houses towards the north end of Area I, less than 80 metres away from the ring-ditch. These Iron Age features were very rich in artifacts and it would be most surprising if none had found their way into their supposedly related fields. It has also been suggested that the features of Division 1 date to a largely aceramic phase of the Bronze Age and that the Neolithic finds are therefore residual. There is, however, very good evidence for extensive Bronze Age fields, or enclosures, laid out in an altogether more elaborate fashion, in the Newark Road and Padholme Road subsites nearby. The ditches defining these fields, although not densely packed with material, have certainly yielded a sufficient quantity of datable artifacts, including distinctive shell-tempered pottery, and a large, rather coarse, flint industry which was quite unlike that described in this report (Pryor 1974d and 1976).

Chapter 3

Late Neolithic/Bronze Age Pottery

Catalogue of Illustrated Pottery Sherds

NOTES ON THE FIGURE DESCRIPTIONS All sherds other than undecorated wall sherds have been drawn. Most of the comparative material has been published by Longworth and our terminology follows his usage (Longworth 1971:97–102; Wainwright and Longworth 1971:48–83). Stippling has been chosen for the illustrations to indicate the poor surface quality of the pottery.

Colour is described using the Munsell system. Hardness is described as outlined in *The First Report* (FNG 1:26), but further categories were required. The term “soft/hard” describes sherds that are just scratched by the fingernail, “soft” describes sherds that may readily be scratched by the fingernail, “very soft” sherds usually required consolidation (PVA in acetone) after washing, and “extremely soft” sherds required consolidation before removal from the ground.

Depths are given in metres below the stripped ground surface and may be converted to absolute levels O.D. by referring to the general plan (Fig. 6) or to any of the relevant illustrated sections. It was frequently impossible to mark individual sherds, particularly small, friable pieces, which were placed in numbered bags. In some cases these bags contain more than one small sherd; thus very small sherds may share one finds’ number. The first two digits of the finds’ number give the year in which the object was excavated.

Feature Division 1 (Fig. 37)

1. Base angle, simple type. Soft fabric with grit and sand temper, also (?) grog. Int. smoother than rough ext. Colour, core and int.: black; ext.: 10YR 5/4 (yellowish brown).
Undecorated.
B2 layer 1, (Grid 21/17) depth 0.10. 73:129
2. Three wall sherds. Very soft, crumbly fabric with sand, grit, and (?) grog; also possible vegetable temper. Int. and ext. rough, weathered. Colour as 1 above.
Decoration: one shallow groove.
B2 layer 1, depth 0.90. All sherds 73:108
3. Two wall sherds, one decorated (+PVA). Very soft fabric with much temper, including sand, grits, and large grog inclusions; also possible vegetable temper. Int. smoother than ext. Colour, ext. and core: black; int.: 10YR 6/3 (pale brown).

Decoration: int.: one grooved line; ext.: parallel, lightly incised vertical lines above deeply incised horizontal parallel lines.

Y21 layer 1, (Grid 41/29) depth 0.10. Both sherds 73:2775

4. Wall sherd. Soft sandy fabric with crushed flint and grits. Int. and ext. rough. Colour, ext.: 5YR 5/6 (yellowish red); int. and core: black.

Decoration: two grooved lines (sherd has broken along axis of upper line) above pinched rustication.

Y21 layer 1, (Grid 49/28) depth 0.10. 73:2450

5. Rim sherd. Extremely soft with sand and vegetable. Colour (+PVA), int. and ext.: black.

Undecorated.

R2 layer 1, (Grid 5/118) depth 0.40. 73:2293

6. Wall sherd. Very soft, flaky fabric with grit and (?) shell. Ext. and int. rough, flaky. Colour, ext. and core: black; int.: 10YR 6/2 (light brownish grey).

Decoration: three wide grooved lines, two converging at 45°.

B21 layer 1, (Grid 34/30) depth 0.30. 73:612

7. Three wall sherds. Soft, sandy fabric with large grogs and grit. Int. and ext. rough, sandy. Colour, int. and core: dark grey to black; ext.: 10YR 6/3 (pale brown).

Decoration: (one sherd), two narrow grooved (incised?) lines of uneven width and depth.

B21 layer 1, (Grid 22/32) depth 0.10. All sherds 73:76

8. Rim sherd. Soft fabric with (?) vegetable temper, fine grits, and sand. Ext. smooth but flaky; int. rough. Colour, int. and core: black to dark grey; ext.: 10YR 6/3 (pale brown).

Undecorated.

B21 layer 1, (Grid 31/30) depth 0.10. 73:607

9. Base angle, simple type. Very soft fabric with large grogs and some sand. Int. rough; ext. smooth, flaky. Colour, int. and core: black; ext. and bottom: 10YR 6/4 (light yellow brown).

Undecorated.

W24 layer 1, (Grid 55/114) depth 0.26. 73:1816

Feature Division 2 (Fig. 37)

10. Rim and wall sherds. Soft fabric with grog (large pieces), grits, and sand; vacuoles and carbon flecks suggest vegetable temper. Colour, int. and core: black; ext.: black to 10YR 4/2 (dark greyish brown).

Undecorated.

B3 layer 1, (Grid 3/18) depth 0.44. All sherds 73:222

11. Rim sherd. Soft fabric with grog, sand, and grits. Ext. and int. rough, sandy, weathered. Colour, int. and core: 10YR 4/1 (dark brown); ext.: 10YR 5/3 (brown).

Undecorated.

B3 layer 1. (Grid 2/17) depth 1.05. 73:261

12. Wall sherd. Soft fabric with sand and grits. Int. smooth; ext. rough and sandy. Colour, int. and core: black; ext.: 10YR 5/6 (yellowish brown).
Decoration: weathered, deep grooves.
B3 layer 1, (Grid 1/17) depth 0.12. 73:267
13. Base angle, simple type. Soft fabric with crushed flint and many small vacuoles. Ext. and int. rough. Colour, ext. and int.: 10YR 5/2 (greyish brown); core: grey.
Undecorated.
B3 layer 5, (Grid 1/17) depth 1.40. 73:661

Feature Division 3 (Fig. 37)

14. Base angle, concave type. Dia. at base about 10 cm. Soft fabric with grits. Ext. and bottom smooth; int. weathered. Colour, int. and core: grey; ext. and bottom: 10YR 4/2 (dark greyish brown).
Decoration: paired impressions arranged 1 cm above, and parallel to, base.
Y4 layer 1, (Grid 40/36) depth 0.20. 73:1248
15. Wall sherd. Soft fabric with grit and (?) grog. Int. and ext. smooth. Colour, int. and core: grey; ext.: 10YR 6/3 (pale brown).
Decoration: four parallel incised lines and three diagonal incised lines.
Y4 layer 1, (Grid 40/35) depth 0.40. 73:1262
16. Rim sherd and wall sherds. Soft fabric with large shell fragments and grits. Int. slightly rougher than ext. which is smoothed. Colour, int. and core: 10YR 5/1 (grey); ext.: 10YR 5/3 (brown).
Decoration: ext.: zone of horizontal deeply grooved lines, with short vertical impressions between centre pair, directly above grooved herringbone; int.: one wide, very deep, open U-shaped groove below the rim. Top of rim impressed by same tool that was used for the ext. impressions.
Y4 layer 1, (Grid 39/37) depth 0.60. All sherds 73:1206
17. Base angle, simple type. Soft fabric with large pieces of shell and grits. Ext. and int. rough. Colour, int. and core: grey; ext.: 5YR 4/4 (reddish brown).
Decoration: two grooved lines parallel to the base.
Y4 layer 1, (Grid 40/36) depth 0.62. 73:1289
18. Two wall sherds. Very soft fabric with grits and grog. Ext. and int. very rough. Colour, ext., core, and int.: dark grey and black.
Decoration: whipped cord impressions in "maggots" 7 mm long.
Y4 layer 1, (Grid 40/35) depth 0.02. Both sherds 73:1230
19. Wall sherd. Very soft fabric: light "corky" feel, large vacuoles, and small grits. ext. and int. rough. Colour, ext. and int.: 10YR 3/4 (very dark greyish brown); core: very dark grey to black.
Decoration: two very deep grooved lines; sherd has broken at top and bottom along two other deep lines.
Y4 layer 1, (Grid 39/36) depth 0.45. 73:1070

20. Wall sherd. Soft fabric with grits and (?) grog. Ext. and int. rough. Colour, ext. and int.: 10YR 5/2 (greyish brown).
Decoration: grooved horizontal lines below grooved chevron.
Y4 layer 1, (Grid 39/36) depth 0.40. 73:1067

Feature Division 4 (Fig. 37)

21. Wall sherd. Soft fabric with coarse grits and sand. Ext. and int. sandy. Colour, ext. and int.: 10YR 4/2 (dark greyish brown); core: very dark grey.
Decoration: two, possibly three, very faintly incised lines.
W1 layer 1, (Grid 57/94) depth 0.22. 73:2603
22. Rim sherd (+PVA). Fabric very soft with grits. Int. and ext. rough. Colour dark.
Decoration: ext.: three shallow punctate impressions and lightly grooved V-shaped motif; int. of rim concave with rounded internal cordon above another concave zone; sherd has broken along the lower cordon or ridge.
W1 layer 1, (Grid 57/95) depth 0.40, from the upper filling of grave 2. 73:2686
23. Wall sherds. Very soft fabric with grit and sand. Rough ext. and int. Colour, int., ext., and core: dark grey to black.
Decoration: two rounded cordons.
W1 layer 1, (Grid 59/95) depth 0.10. All sherds 73:1571
24. Rim sherds. Soft fabric with few grits. Ext. surface smoothed, int. weathered, rough. Colour, ext., core, and int.: 5YR 3/2 (dark reddish brown). Rim everted. Probably Middle/Early Neolithic.
(cf. FNG 1:fig. 6:9).
Undecorated.
W1 layer 2 (Grid 61/95) depth 0.50. All sherds 73:1588
25. Wall sherd. Very soft fabric with sand and grits. Ext. and int. rough, weathered. Colour, ext., int., and core: grey.
Decoration: two, possibly three, grooved lines. Weathered traces of whipped cord impressions.
W1 layer 2, (Grid 61/93) depth 0.25. 73:1591
26. Wall sherd. Soft fabric with some sand, grit, and (?) grog. Ext. surface smoothed; int. surface lost. Colour, ext. and core: black.
Decoration: deep, clearly defined, grooved lines.
W1 (Grid 55/94) depth 0.35, from the upper filling of grave 2. 73:2622
27. Rim sherd. Hard fabric, well-fired, with grit and sand. Colour, ext., int., and core: 10YR 3/2 (very dark greyish brown).
Decoration: incised cross-hatch lines above faint horizontal scratched line.
W1 (Grid 55/94) depth 0.45, from the upper filling of grave 2. 73:2621

28. Wall sherd. Very soft (+PVA), with small grits. Ext. and int. rough, sandy. Colour determination not possible.
Decoration: four lightly grooved lines in rough herringbone pattern; also one deep impression made with rounded tool.
 W1 (Grid 56/94) depth 0.40, from the upper filling of grave 2. 73:2693
29. Collar sherd. Soft fabric with grog and grits. Ext. smoothed; int. rougher than ext. Colour, core: dark grey; int.: 10YR 5/1 (grey); ext.: 10YR 6/1 (grey/light grey).
Undecorated.
 W1 layer 3, (Grid 46/83) depth 0.75. 73:2889
30. Wall sherd. Soft fabric with grit and (?) grog. Ext. and int. very rough, weathered. Colour, ext. and int.: 10YR 5/3 (brown); thick black core.
Decoration: shallow groove and single rounded impression. Weathered.
 W1 layer 2, (Grid 61/94) depth 0.60. 73:2650
31. Rim sherd (+PVA). Fabric soft with sand and grits. Ext. and int. smooth. Colour: dark.
Decoration: incised horizontal herringbone below rim.
 W1 layer 2, (Grid 56/94) depth 0.50, from filling of grave 2. 73:2695
32. Wall sherd. Fabric very soft, flaky, (?) grog and (?) vegetable temper. Ext. smoothed; int. lost. Colour, core: dark bluish grey; ext.: black.
Decoration: part of two grooved lines (sherd has broken along axis of vertical groove); single applied boss.
 W1 layer 2, (Grid 63/94) depth 0.60. 73:1523
33. Wall sherd. Soft fabric with fine grits. Ext. and int. rough, weathered. Colour, core, ext., and int.: black.
Decoration: six or (?) seven vertical, very slight scratched lines.
 W1 layer 2, (Grid 62/93) depth 0.52. 73:1597
34. Rim sherd. Soft, sandy fabric with grog, stone, and sand. Ext. and rim bevel rough; int. lost. Colour, ext.: 10YR 4/2 (dark greyish brown); core: dark grey.
Undecorated (weathered).
 W1 layer 2, (Grid 56/94, same as grave 2, but no soil texture difference could be detected at this depth) depth 0.20. 73:2612
35. Base stain (simple shape). Fabric extremely soft (+PVA) and hardly distinguishable from the surrounding sand-silt; temper is probably sand with (?) vegetable. Core black, but of uneven thickness; ext., dark reddish brown.
Decoration: not discernible.
 W1 layer 2, (Grid 57/95) depth 0.83. 73:2699
 At this depth the filling of grave 2 could be clearly seen and sherd 73:2699 lay about 50 centimetres to the north, outside the grave.
36. Wall sherds. Soft fabric with few grits and (?) grog. Ext. smoothed; int. rough. Colour, ext. and int.: 10YR 6/3 to 5/3 (pale brown to brown); thin (1.5 mm–2.0 mm) black core.
Decoration: pinched after smoothing.
 W1 layer 2, (Grid 54/71) depth 0.73 All sherds 73:726

37. Wall sherd. Soft fabric with sand. Ext. and int. smoothed, sandy. Colour, ext., int., and core: 10YR 3/2 (very dark greyish brown).
Decoration: wide grooved line (sherd has broken along axis of second, parallel, grooved line).
W1 layer 2, (Grid 61/94) depth 0.50. 73:1593
38. Wall sherd. Fabric very soft, flaky with sand, grits, also (?) grog. Ext. and int. rough, sandy. Colour, ext. and core: black; int.: very dark brown.
Decoration: two roughly parallel lightly incised lines.
W1, (Grid 58/95) depth 0.60, from the upper filling of grave 1. 73:2673

Feature Division 5 (Fig. 38)

1. Wall sherd (+PVA). Dia. about 20 cm. Soft fabric with grit and (?) grog. Int. rough; ext. (?) smoothed before decoration. Colour, int. and core: black; ext.: very dark reddish brown (before PVA).
Decoration: fingernail-impressed vertical applied cordon with, to left, opposed groups of incised lines (filled triangles) and, to right, very deeply incised horizontal herringbone.
W17 layer 1, (Grid 65/94) depth 0.43. 73:1950
2. Wall sherd (+PVA). Very soft fabric with fine grits and much sand. Ext. rough; int. smooth. Colour: dark (PVA).
Decoration: two parallel incised lines.
W17 layer 1, (Grid 68/84) depth 0.43. 73:1964.
3. Rim sherd. Soft fabric with sand, (?) grog, and few grits; sandy feel. Colour, ext., int., and core: dark grey to black.
Decoration: very lightly incised lines at 45° to the rim.
W17 layer 1, (Grid 64/92) depth 0.13. 73:1655
4. Wall sherd. Soft fabric with coarse grits and grog. Ext. smoothed; int. rough. Colour, core and int.: 10YR 3/1 (very dark grey); ext.: (this pale colour only 1 mm–2 mm thick) 10YR 6/3 (pale brown).
Decoration: slight (?) vertical pinched-up cordon separates two groups of whipped cord “maggot” impressions. Right group is above zone of three parallel horizontal (?) grooved or cord-impressed lines.
W17 layer 2, (Grid 63/90) depth 0.60. 73:2000

Feature Division 6 (Fig. 38)

5. Wall sherd. Soft fabric with few grits. Ext. and int. weathered, rough. Colour, ext. (+PVA), int., and core: 10YR 4/1 (dark grey).
Decoration: four parallel grooved lines.
W29 layer 1, (Grid 40/96) depth 0.20. 73:2849
6. Wall sherd (+PVA). Soft fabric with few grits. Ext. smoothed; int. rough. Colour, core and int.: black; ext.: 7.5YR 5/4 (brown).

Decoration: three parallel grooved lines.

W31 layer 1, (Grid 41/104) depth 0.35. 73:3080

7. Wall sherd (+PVA). Soft fabric with large vacuoles (? vegetable temper) and few grits. Int. and ext. rough. Colour, ext. and core: dark grey; int.: 10YR 4/2 (dark greyish brown).

Decoration: horizontal and diagonal deeply incised lines.

W31 layer 1, (Grid 41/104) depth 0.35. 73:3081

8. Wall sherd (+PVA). Very soft fabric with large (?) vegetable temper vacuoles, shell, grits, and grog. Ext. smoothed; int. lost. Colour, core: dark grey; ext.: 10YR 5/4 (yellowish brown).

Decoration: two (?) vertical pinched cordons.

W32 layer 1, depth 0.08. 73:3127

9. Wall sherd. Fabric same as no. 8 above.

Decoration: traces of two deeply grooved lines with a possible cordon between; also several random, deep punctate impressions.

W32 layer 1, depth 0.06. 73:3134

10. Eight wall sherds. Fabric same as no. 8 above (no. 8–10 probably belong to the same large vessel).

Decoration: three irregular deep grooved lines enclose two irregular raised cordons. Weathered.

W32 layer 1, depth 0.14. All sherds 73:3145

11. Wall sherd. Fabric soft with grits and (?) grog. Ext. and int. rough. Colour, int. and core: dark grey; ext.: 10YR 5/4 (yellowish brown).

Decoration: one incised line.

W33 layer 1, (Grid 89/112) depth 0.05. 73:3230

Feature Division 7 (Fig. 38)

12. Base angle, simple type. Fabric soft with grits and sand. Ext. smoothed; bottom and int. rough, sandy feel. Colour, int. and core: black; ext.: 5 YR 4/3 (reddish brown).

Undecorated.

B1 layer 1, (Grid 3/14) depth 0.37. 73:173

13. Base angle, slightly concave. Soft fabric with grog and sand. Ext. and bottom rough; int. lost. Colour, core: black to 10YR 4/2 (dark greyish brown); ext.: 5YR 4/4 (reddish brown).

Undecorated.

B1 layer 1, (Grid 3/14) depth 0.42. 73:175

14. Base angle, concave type. Dia. at base 11 cm. Soft fabric with grits and (?) grog. Ext. smoothed, bottom flat and regular. Colour, int. and core: dark grey; ext.: 10YR 6/3 (pale brown).

Decoration: part of one, possibly two, filled rectangles.

B5 layer 1. 73:316

15. Wall sherd. Fabric soft, flaky with grits. Colour, ext. and core (int. lost): black.

Decoration: two grooved parallel lines. Weathered.

B7 layer 1, (Grid 15/33) depth 0.20. 73:49

16. Wall sherd. Fabric soft, flaky, with sand and (?) grog. Ext. rough; int. smooth. Colour, int. and core: dark grey; ext.: 7.5YR 3/2 (dark brown).
Decoration: shallow (?) shell-impressed lines (see no. 30 below).
Weathered.

B13 layer 1, (Grid 15/2). 73:179

17. Rim and wall sherds. Soft fabric, flaky, with many (?) vegetable temper vacuoles and grits. Ext. and int. rough. Colour, ext., int., and core: black.

Decoration: ext.: two parallel grooved lines; int.: deep stepped groove below rim (on both sherds).

B24 layer 1, depth 0.25. Both sherds 73:451

18. Wall sherd. Soft fabric with grog and (?) vegetable temper. Ext. and int. rough. Colour, int. and core: black; ext.: 10YR 3/2 (very dark greyish brown).

Decoration: horizontal grooved line; trace of another, shallower, diagonal line.

B24 layer 1. 73:342

19. Three wall sherds. Fabric soft with grog and some grit temper. Ext. and int. rough. Colour, int. and core: black; ext.: 5YR 6/6 (reddish yellow).

Decoration: (one sherd) two grooved lines. Weathered.

B24 layer 1, (Grid 5 east/28), top of scraped surface. 73:353

20. Wall sherd. Same fabric as 19 above, but thinner. Dia. about 7 cm.

Decoration: four roughly parallel horizontal grooved lines.

B24 layer 1, depth 0.22. 73:341

21. Wall sherd (+PVA). Very soft fabric with large grogs. Ext. smoothed; int. rough. Colour, int. and core: 10YR 5/3 (brown); ext. (+PVA): 5YR 4/4 (reddish brown).

Decoration: roughly parallel uneven grooved lines.

B28 layer 1, (Grid 20/9) top of stripped surface. 73:362

22. Base angle (simple type) and two decorated wall sherds. Fabric soft; grog and grit temper. Ext. and int. smoothed. Ext. of base angle badly weathered. Colour, int. and core: dark grey to black; ext.: 5YR 4/2 (dark reddish grey).

Decoration: parallel horizontal grooved lines. Weathered.

B28 layer 1. All sherds 73:311

23. Wall sherd. Soft, crumbly fabric with sand and grits. Ext. and int. rough. Colour, ext., int., and core: 10YR 5/3 (brown).

Decoration: one wide, shallow grooved line.

B28 layer 1, (Grid 20/9) depth 0.20. 73:381

24. Base angle, simple type. Dia. at base about 16 cm. Fabric soft with grit, sand, and many large grog inclusions. Int. and ext. rough; bottom very rough. Colour, int. and core: black; ext. and bottom: 10YR 5/1 (grey).

Decoration: part of two (?) rectangular groove-outlined zones (cf. no. 14 above).

B28 layer 1, (Grid 21/10) depth 0.20. 73:425

25. Base angle, simple type. Dia. (at 2.5 cm above base) 21 cm. Fabric soft with grog and (?) grits. Ext. and int. rough, but smoother than bottom. Colour, ext., int., and bottom: 7.5YR 3/2 (dark brown); core: dark grey. *Decoration*: top of sherd broken along horizontal grooved line. B28 layer 1, (Grid 21/10) depth 0.30. 73:428
26. Wall sherd. Fabric soft with few grits. Ext. rough; int. lost. Colour, ext.: 7.5YR 6/4 (light brown); core: dark grey. *Decoration*: corner of groove-outlined (?) triangle filled with stabbed impressions (made with pointed tool at oblique angle). B29 layer 1, (Grid 21/12) depth 0.05. 73:370
27. Rim sherd. Soft fabric with grits. Ext. and int. rough. Colour, ext., int., and core: 10YR 3/1 (very dark grey). *Undecorated*. B29 layer 1, (Grid 21/12), top of stripped surface. 73:364
28. Base angle, simple type. Dia. at base 11.5 cm. Fabric soft/hard with sand and fine grits. Ext. smoothed; int. rough; bottom very rough. Colour, bottom and core: black; ext. 10YR 4/4 (dark greyish brown); int. 10YR 5/3 (brown). *Undecorated*. B44 layer 1. 73:508
29. Base angle, simple type. Dia. at base 11.0 cm. Fabric hard with sand, grits, and (?) grog. Ext., int., and bottom rough. Colour, core and int.: black; ext.: 10YR 3/3 (dark brown). Possibly same vessel as no. 28 above. *Undecorated*. B44 layer 1. 73:500
30. Wall sherds. Fabric soft/hard with grits and (?) grog. Ext. and int.
31. rough. Colour, ext., int., and core: 10YR 3/1 (very dark grey). *Decoration*: all-over horizontally-arranged (?) shell impressions (tool with thumbnail-like curve and minute, very regular, denticulations on concave face). B44 layer 1. Sherds 73:512 and 73:510, respectively.
32. Rim sherd. Fabric soft with few grits. Ext. and int. rough. Colour, core, ext., and int.: 10YR 4/1 (dark grey). Thickened rim. *Undecorated*. B44 layer 1. 73:504
33. Wall sherd. Fabric soft, similar to no. 31 and 32 above. *Decoration*: irregular rows of shallow (?) shell impressions (see no. 30 above) above applied cordon. B44 layer 1. 73:501

Feature Division 7 (continued Fig. 39)

1. Rim sherd. Dia. at rim about 15 cm. Fabric soft/hard with sand and grits. Ext. and int. rough. Colour, ext., int., and core: dark grey.

- Decoration:* ext.: two horizontal rows of fingernail impressions above two diagonal rows of the same; int.: row of fingernail impressions at rim.
B50 layer 2, (Grid 22/22) depth 0.51. 73:566
2. Wall sherd with horizontal lug. Dia. (int.) about 12 cm. Fabric soft/hard, sandy, as no. 1 above.
Decoration: horizontal lug is pierced by two vertical perforations. The thin ridges raised when the holes were pierced show no signs of abrasion; they are, therefore, probably decorative. Vertical (ext.) lug surface decorated with light (?) fingernail impressions, similar to no. 1 above.
B50 layer 2, (Grid 22/22) depth 0.51. 73:566
3. Wall sherd. Soft fabric with sand, grits, and grog. Ext. and int. rough. Colour, int. and core: dark grey; ext.: 7.5YR 5/4 (brown).
Decoration: horizontal grooved lines.
B50 layer 2, (Grid 22/22) depth 0.37. 73:557
4. Two wall sherds. Dia. about 19 cm. Fabric soft/hard with grit and (?)
5. grog. Ext. and int. rough. Colour, int. and core: dark grey to black; ext.: 10YR 5/4 (yellowish brown), large patches of 5YR 4/6 (yellowish red).
Decoration: five horizontal grooved lines enclose two rows of punctate impressions made with steeply sharpened tool; also three haphazard grooved lines.
B50 layer 2, (Grid 22/22) depth 0.51. Both sherds 73:565
6. Two wall sherds. Colour and fabric as no. 4 and 5 above, but with larger grog inclusions.
Decoration: diagonal grooved lines above two horizontal grooved lines, all above row of punctate impressions; second sherd has three horizontal grooved lines.
B50 layer 2, (Grid 22/23) depth 0.40. Both sherds 73:562
7. Wall sherd. Fabric and colour as no. 4 and 5 above. (Note: sherds 4–7 may all be from the same vessel.)
Decoration: two faint grooved lines.
B50 layer 2, (Grid 21/22) depth 0.52. 73:581
8. Wall sherd. Fabric soft, flaky, with (?) vegetable (vacuoles), sand, and fine grits. Ext. smoothed; int. rough. Colour, int. and core: dark grey; ext.: 10YR 4/2 (dark greyish brown).
Decoration: three (possibly four) grooved lines made with angled tool.
B50 layer 2, (Grid 21/22) depth 0.34. 73:551
9. Wall sherd. Fabric soft with grits, grog, and sand. Ext. and int. rough. Colour, int. and core: black; ext.: 10YR 6/4 (light yellowish brown).
Decoration: one grooved line, two small punctate impressions. Weathered.
B50 layer 2, (Grid 22/22) depth 0.42. 73:556
10. Wall sherd. Soft, flaky fabric with much sand and fine grits. Ext. and int. rough and sandy. Colour, ext. and int.: 10YR 3/2 (very dark greyish brown); core: black.

Decoration: horizontal (?) shell-impressions (same as Fig. 38:30 and 31).
B50 layer 2, (Grid 21/22) depth 0.40. 73:552

11. Two wall sherds. Soft fabric with grog and grits. Ext. and int. rough. Colour, int. and core: black; ext.: 10YR 5/3 (brown).

Decoration: uneven curvilinear grooved (?) trailed lines.

B50 layer 2, (Grid 21/22) depth 0.35. Both sherds 73:578

12. Wall sherd. Soft fabric with sand and grits. Ext. and int. rough, sandy. Colour, ext. and core: dark grey; int.: 10YR 3/2 (very dark greyish brown).

Decoration: ext.: five vertical (?) shell-impressions; int.: vertical (?) shell-impressions above five parallel lightly grooved lines (the latter probably executed by drawing a shell across the clay).

B54 layer 1, (Grid 26/34). 73:609

13. Rim sherd. Dia. 9 cm. Fabric soft/hard with grit and some sand. Ext. and int. rough. Colour, ext., int., and core: dark grey to black.

Decoration: rim pinched and lightly fingertip impressed.

B61 layer 1, depth 0.23. 73:637

14. Complete profile (+PVA). Dia. at rim 19 cm; Ht. 10.9 cm; base Dia. 10 cm. Fabric very soft with sand and grits. Ext. and bottom rough; int. lost. Colour, int. and core: dark; ext. (+PVA): 7.5YR 4/2 (brown/dark brown) original colour probably nearer 5YR 5/3 (reddish brown).

Undecorated.

B61 layer 1, depth 0.02. 73:624

15. Wall sherd. Soft fabric with grit and (?) grog. Ext. and int. rough. Colour, ext., int., and core: 10YR 4/1 (dark grey).

Decoration: vertical rows of the fine incised herringbone bordering zone of parallel incised lines.

B61 layer 1, depth 0.30. 73:632

16. Rim sherd. Fabric soft/hard with sand, grits, and (?) grog. Ext. rough; int. very rough. Colour, int. and core: very dark grey to black; ext.: 10YR 5/2 (greyish brown).

Decoration: rim: pinched; ext.: roughly parallel incised horizontal lines.

B61 layer 1, depth 0.33. 73:633

17. Wall sherd. Dia. about 10 cm. Soft/hard with sand, grits, and (?) grog (as no. 16 above). Colour, int., ext., and core: dark grey/black.

Decoration: ext.: parallel deeply grooved diagonal lines below two (or three) parallel horizontal grooved lines; int.: trace of one horizontal grooved line.

B61 layer 1, depth 0.23. 73:634

18. Base angle, concave type. Dia. at base 14 cm. Fabric very soft, porous, with sand, some grit, and small (?) grogs. Ext. and int. rough; bottom very rough. Colour uneven, but usually 10YR 6/2 (light brownish grey); patches of grey/dark grey core.

Undecorated.

B61 layer 1, depth 0.24. 73:630

19. Wall sherd. Dia. about 18 cm. Fabric soft, with coarse sand and grits. Ext. and int. very rough. Colour, int. and core: black; ext.: 10YR 4/2 (dark greyish brown).
Decoration: vertical grooved herringbone.
B61 layer 1, depth 0.06. 73:627

Feature Division 8 (Fig. 39)

20. Rim sherd. Soft/hard fabric with sand and fine grits. Ext. and int. rough. Colour, thick black core; ext.: 10YR 4/2 (dark greyish brown); int.: 10YR 3/1 (very dark grey).
Undecorated.
W18 layer 1, (Grid 60/92) depth 0.03. 73:879
21. Base angle and two wall sherds. Fabric very soft, friable, with few grits, and (?) grog. Ext. smoothed; int. rough; bottom rough. Colour, int. and half of core: black; ext. and half of core (clear distinction between two colours): 10YR 6/4 (light yellowish brown).
Decoration: deeply incised, roughly parallel vertical lines. Irregular sharp tool used (? broken twig).
W18 layer 1, depth 0.08. All sherds 73:885
22. Wall sherd (+PVA). Very soft fabric with grits and coarse sand. Ext. and int. rough. Colour, core, int., ext.: black.
Decoration: three parallel grooved lines.
W18 layer 1, depth 0.11. 73:448
23. Rim sherd. Fabric soft/hard with sand, small grits, and (?) grog. Ext. and int. smooth, sandy. Colour, core, int.: black; ext.: 10YR 3/1 (very dark grey).
Undecorated.
W18 layer 1, depth 0.08. 73:854
24. Weathered (?) rim sherd. Fabric as no. 23 above.
Undecorated.
W18 layer 1, (Grid 60/90) depth 0.04. 73:884
25. Rim sherd. Fabric soft, with grits. Ext. and int. rough; int. rim bevel finger-smoothed. Colour, int. rim bevel, int., and core: very dark grey; ext.: 10YR 5/2 (greyish brown).
Decoration: one horizontal grooved line.
W18 layer 1, (Grid 60/92) depth 0.01. 73:871
26. Wall sherd (broken immediately above base angle). Dia. (at bottom) 21 cm. Fabric soft/hard with sand, fine grits, and grog. Ext. smoothed; int. rough. Colour, int. and core: black; ext. (thin "skin" of colour): 10YR 6/4 (light yellowish brown).
Decoration: part of zone of deeply incised uneven diagonal lines to left of fingertip-impressed applied vertical cordon.
W18 layer 1, (Grid 60/92) depth 0.08. 73:1065

27. Wall sherd. Dia. 26 cm. Hard fabric, well fired, with sand, grits, and grog. Ext. and int. rough. Colour, ext. and int.: 2.5YR 5/2 (greyish brown); core: dark grey.
Decoration: band of triangle-toothed comb-impressions.
W18 layer 1, depth 0.18. 73:1356
28. Wall sherd. Soft/hard fabric with sand and fine grits. Ext. and int. rough, sandy feel. Colour, int. and core: 7.5YR 5/2 (brown); ext.: 10YR 6/4 (light yellowish brown).
Decoration: diagonal comb-impressed lines above four horizontal grooved lines.
W18 layer 1, (Grid 60/92) depth 0.08. 73:852

Feature Division 8 (continued Fig. 40)

1. Wall sherd (+PVA). Soft, friable fabric with grog, grit, and sand. Ext. smoothed; int. rough. Colour, int. and core: very dark brown/black; ext. 10YR 5/4 to 7.5YR 4/4 (yellowish brown to dark brown).
Decoration: vertical, all-over, deeply grooved chevrons.
W18 layer 1, (Grid 60/92) depth 0.10. 73:446
2. Wall sherd. Fabric soft with grit and sand. Ext. and int. rough, sandy. Colour, ext., int., and core: 7.5YR 4/4 (brown/dark brown).
Decoration: close, irregular rows of (?) shell-impressions (cf. Fig. 38:30).
W18 layer 1, depth 0.17. 73:1355
3. Rim sherd. Soft fabric with sand and few grits. Ext. and rim bevel smoothed; int. surface lost. Colour, ext. and core: 7.5YR 5/4 (brown).
Decoration: V-shaped thumbnail- and fingernail-impressions above applied flat boss (cf. Fig. 37:32), in turn above two horizontal grooved lines.
W18 layer 1, (Grid 61/92) depth 0.02. 73:877
4. Wall sherd. Soft friable fabric, heavily tempered with grog, grit, and (?) sand. Ext. poorly smoothed; int. rough. Colour, int. (+PVA): very dark brown; core: black; ext. (no PVA): 10YR 5/4 (yellowish brown).
Decoration: horizontal grooved herringbone above three grooved lines.
W18 layer 1, depth 0.10. 73:866
5. Wall sherd. Soft fabric with grits and sand. Ext. smooth; int. rough. Colour, ext., int., and core: 10YR 4/1 to 3/1 (dark grey to very dark grey).
Decoration: row of four (?) shell-impressions with traces of similar rows above and below.
W18 layer 1, (Grid 60/92) depth 0.11. 73:1347
6. Wall sherd. Fabric soft with sand and grits. Ext. and int. rough. Colour, ext., int., and core: 10YR 4/2 (dark greyish brown).
Decoration: sherd has broken along horizontal grooved line above a row of (?) shell-impressions.
W18 layer 1, (Grid 60/92) depth 0.16. 73:1353

7. Wall sherd. Fabric as no. 6 above, but colour (ext., int., and core) paler: 10YR 6/4 (light yellowish brown) with grey patches.
Decoration: band of deep (1.5 mm) (?) shell-impressions; sherd has broken along a grooved line.
W18 layer 1, (Grid 60/92) depth 0.11. 73:445
8. Rim sherd. Fabric soft/hard with sand and grits. Ext. and int. rough, sandy. Colour, ext., int., and core: 10YR 4/1 (dark grey).
Decoration: int. rim bevel: triangular punctate impressions; ext.: all-over close, parallel, grooved lines.
W18 layer 1, (Grid 60/92) depth 0.12. 73:1350
9. Wall sherd. Fabric and colour as no. 7 above.
Decoration: sherd has broken along a grooved line. Weathered.
W18 layer 1, (Grid 60/92) depth 0.07. 73:895
10. Wall sherd. Fabric soft/hard with sand and fine grits. Ext. and int. smooth, sandy. Colour, ext., int., and core: 10YR 4/2 (dark greyish brown).
Decoration: two parallel grooved lines.
W19 layer 1, (Grid 62/91) depth 0.05. 73:1565
11. Wall sherd. Soft fabric with sand, grit, and grog. Surfaces weathered, sandy. Colour, half core and ext.: 10YR 3/1 (very dark grey); half core and int.: 10YR 6/3 (pale brown).
Decoration: three vertical, weathered, open-toothed comb-impressions.
W19 layer 1, (Grid 62/91) top of stripped surface. 73:1550

Feature Division 9 (Fig. 40)

12. Three wall sherds. Fabric soft, flaky with few grits and much grog. Ext. smoothed; int. rough. Colour, core and int.: black; ext.: 10YR 6/3 (pale brown).
Decoration: rows of light stabs with sharpened tool; random fingernail-impressions and pinches.
R1 layer 1. All sherds 73:1183
13. Base angle, simple type (+PVA). Dia. at base 19 cm. Fabric and colour as no. 12 above.
Decoration: one irregular row of fingernail-impressions.
R1 layer 1. 73:1917
14. Wall sherd. Soft/hard fabric with sand, fine grits, and hard (?) grog. Ext. and int. smooth, sandy. Colour, int. and core: 10YR 3/1 (very dark grey); ext. 10YR 4/2 (dark greyish brown).
Decoration: circular impressions (? bird bone).
R5 layer 1, depth 0.02. 73:1902
15. Wall sherd. Fabric very soft with much grog and fine grits. Ext. and int. rough. Colour, ext. and core: black; int.: 7.5YR 5/4 (brown).
Decoration: two parallel and one diagonal grooved line.
R5 layer 1, depth 0.08. 73:1913

16. Base angle, simple type. Dia. at base 20.5 cm. Fabric soft with large grits and sand. Ext. and bottom very rough; int. lost. Colour, ext.: 10YR 4/2 (dark greyish brown); core and bottom: black.
Decoration: deep fingertip-impressions.
R5 layer 1, depth 0:05. 73:1901
17. Wall sherd. Fabric soft/hard with sand and grits. Int. and ext. rough, with ridges between grooves poorly smoothed. Colour, int., ext., and core: 10YR 3/2 (very dark greyish brown) to black.
Decoration: parallel deep grooves.
R5 layer 1, depth 0.03. 73:1903
18. Rim sherd. Fabric harder than, but similar to, no. 14 above.
Decoration: short (?) fingernail-impression on top of rim, fingertip-impression on ext. of rim, two rows of (?) bird bone impressions on ext. surface (cf. no. 14 above).
R5 layer 1, depth 0.05. 73:1908
19. Wall sherd. Soft fabric with grits. Ext. and int. rough; int. smoother than ext. Colour, ext., int., and core: 10YR 3/2 (very dark greyish brown) to black.
Decoration: deep horizontal grooved line with four diagonal grooved lines, slightly shallower, above it.
R5 layer 1, depth 0.05. 73:1911
20. Wall sherd. Dia. about 17 cm. Fabric soft, porous, with grit and sand. Ext. and int. rough. Colour, ext. and int.: 10YR 5/4 (yellowish brown); thin (2 mm) black core.
Decoration: very deep (24 mm) grooved vertical herringbone.
W9 layer 1, (Grid 32/68) depth 0.26. 73:909
21. Wall sherd. Fabric soft, light and "corky", with grits and (?) grog. Ext. very rough; int. lost. Colour, ext.: 10YR 5/3 (brown), core: grey.
Decoration: applied, rounded cordon. Weathered.
W9, layer 1 (Grid 33/68) depth 0.20. 73:906
22. Wall sherd. Fabric and colour as 21 above.
Decoration: light grooved line parallel to, and immediately above, impressed applied cordon. Weathered.
W9, layer 1 (Grid 33/68) depth 0.15. 73:905
23. Base angle, concave type. Fabric soft with large grits and grogs. Ext. rough; int. smoothed. Colour, ext. and core: 10YR 5/4 (yellowish brown); int.: black.
Decoration: applied, plain, vertical cordon above slight basal flange; fingertip-impressions to left of cordon and traces of grooved lines near break, to right.
Y1 layer 1, (Grid 55/56) depth 0.06. 73:924
24. Base angle, concave type. Dia. at base about 15 cm. Fabric soft (harder than no. 23 above) with much grit and grog. Ext. and int. smooth. Colour, ext.: 10YR 5/4 (yellowish brown); int. and core: black.
Decoration: vertical applied cordon carrying random triangular impressions with, to left, diagonal lightly grooved lines; to right, grooved open

cross-hatched lines.

Y1 layer 1, (Grid 55/56) depth 0.03. 73:1178

25. Wall sherd. Dia. about 16 cm. Fabric soft with much grog and some grit. Ext. and int. rough. Colour, ext. and int.: 10YR 5/4 (yellowish brown); thick black core.

Decoration: two rows of pinching.

Y1 layer 1, (Grid 55/56) depth 0.03. 73:929

26. Base angle, concave type. Soft, porous fabric with sand and grit. Ext. and bottom rough; int. lost. Colour, ext. and core: 7.5YR 4/4 (dark brown).

Undecorated.

Y1 layer 1, (Grid 55/56) depth 0.02. 73:921

27. Base angle, simple type. Dia. at base about 18 cm. Fabric soft, with (?) grog, sand, and grit. Ext. and int. rough. Colour, bottom: 5YR 5/4 (reddish brown); ext.: 10YR 6/3 (pale brown); int. and core: dark grey to black.

Decoration: open, diagonal opposed lines, lightly grooved.

Y1 layer 1, (Grid 55/56) depth 0.03. 73:938

28. Three wall sherds. Fabric soft with few grits and (?) grog. Ext. and int. rough. Colour, ext. and int.: 10YR 6/4 (light yellowish brown); irregular black core.

Decoration: (no. 28) applied cordon with transverse fingertip-impressions separates two zones of opposed diagonal grooved lines; (no. 29) two rows of punctate impressions; (no. 30) applied cordon with (?) fingertip-impressions.

Y1 layer 1. All sherds 73:1180

Feature Division 9 (continued Fig. 41)

1. Wall sherd. Dia. about 32 cm. Soft/hard fabric with few grits and many large grogs. Int. and ext. rough. Colour, ext. and int.: 7.5YR 5/4 (brown); thick core: dark grey to black.

Decoration: roughly parallel grooved horizontal lines.

Y1 layer 1, (Grid 55/56) depth 0.04. 73:935

2. Wall sherd. Fabric as Fig. 40:28–30.

Decoration: converging roughly incised lines of greatly varying depth.

Y1 layer 1, (Grid 55/56) depth 0.16. 73:933

3. Wall sherd. Fabric soft/hard, crumbly core, with sand and (?) grog. Ext. and int. rough. Colour, ext., int., and core: black.

Decoration: two rows of (?) shell-impressions.

Y1 layer 1, (Grid 55/56) depth 0.03. 73:922

4. Wall sherd. Fabric as no. 3 above, but slightly softer.

Decoration: two rows of (?) shell-impressions separated by low, rounded, applied cordon.

Y1 layer 1, (Grid 55/56) depth 0.05. 73:930

5. Base angle, simple type. Fabric soft with grit and (?) grog. Ext. rough; int. rough, pitted. Colour, ext., int., core, and bottom: 7.5YR 4/4 (brown/dark brown).
Undecorated.
Y1 layer 1, (Grid 55/56) depth 0.02. 73:920
6. Wall sherd. Fabric surface soft/hard, core very crumbly, with grits and grog. Ext. rough; int. lost. Colour, ext. and core: black.
Decoration: rows of punctate impressions, made with sharpened implement, to right of pinched vertical cordon.
Y1 layer 1, (Grid 55/56) depth 0.11. 73:941
7. Two wall sherds. Fabric and colour as Fig. 40:28–30.
Decoration: (sherd 1) two (?) horizontal lightly grooved lines enclose irregular row of stabbed impressions made with a sharp tool; (sherd 2) three roughly parallel incised lines.
Y1 layer 1, (Grid 55/56) top of stripped surface. Both sherds 73:917
8. Wall sherd. Fabric and colour as Fig. 40:28–30. Dia. about 30+ cm.
Decoration: corner of square/rectangular panel defined by multiple, lightly grooved lines and irregular row of circular punctate impressions.
Y1 layer 1, (Grid 55/56) depth 0.06. 73:931
9. Two wall sherds. Fabric soft with small (?) vegetable temper vacuoles and few grits. Ext. and int. rough. Colour, ext.: 10YR 4/2 (dark greyish brown); int.: very dark grey; core: blue-black to black.
Decoration: (sherd 1) opposed grooved lines and diagonal row of open pinch-impressions; (sherd 2) parallel, lightly grooved lines.
Y8 layer 1, (Grid 70/56) depth 0.24. Both sherds 73:439
10. Base angle, protruding type. Soft fabric with grog and grits. Ext., int., and bottom rough. Colour, ext., int., and bottom: 10YR 5/3 (brown); thick black core.
Undecorated.
Y12, layer 1 (from sieve, therefore grid and precise depth doubtful). 73:2412
11. Wall sherds. Fabric soft/hard with grit and (?) grog. Ext. and int. smooth. Colour, ext.: 10YR 5/4 with patches of 5YR 4/2 (yellowish brown and dark reddish grey).
Decoration: (no. 11) two close rows of (?) shell-impressions. The decoration is executed by holding the shell at a very acute angle. No. 12 same decoration as no. 11, but shallower.
Y12 layer 1, depth 0.20 (no. 11) and 0.16 (no. 12). Sherds 73:2407 and 73:2405, respectively.
13. Base angle, simple type. Soft fabric with large grits (crushed and uncrushed) and some sand. Ext. and bottom rough; int. very rough. Colour, ext. and bottom: 10YR 6/4 (light yellowish brown); int. and core: very dark grey to rich black.
Decoration: random light fingertip-impressions.
Y12 layer 1, depth 0.17. 73:2431

14. Wall sherd. Dia. about 26 cm. Fabric soft/hard with grit and sand. Int. smooth; ext. rough. Colour, ext.: 10YR 5/4 (yellowish brown); int. and core: black.
Decoration: short vertical grooved lines below row of oval impressions, below two grooved lines; ridge between the two grooved lines is fingertip-impressed.
 Y12 layer 1, depth 0.05. 73:2403
15. Wall sherd. Dia. about 18 cm. Fabric soft with few grits. Ext. and int. rough. Colour, ext. and core: 10YR 5/2 (greyish brown); int.: 10YR 5/2 with patches of 5YR 4/6 (yellowish red).
Decoration: ext.: four horizontal rows of very fine impressions bound plain or fingernail-filled bands; int.: two sets of paired parallel grooves enclose a reserved zone, partly filled with two converging grooved lines.
 Y12 layer 1, depth 0.20. 73:2408

Feature Division 10 (Fig. 41)

16. Wall sherd. Fabric soft with fine grits. Ext. and int. weathered, rough. Thick black core. Colour, int. and ext.: 10YR 7/3 (very pale brown).
Decoration: three grooved lines above herringbone.
 P1 layer 1, depth 0.06. 74:25
17. Wall sherds (+PVA). Very soft fabric with few grits. Ext. rough; int. smooth. Colour, int.: dark; ext.: 2.5YR 3/4 (dark reddish brown).
Decoration: deep, rounded, wide (4 mm) impressions.
 P1 layer 1, depth 0.06. 74:14
18. Wall sherd (+PVA). Extremely soft fabric with fine grits. Ext. and int. smooth. Colour, ext. and int.: dark brown/black.
Decoration: uneven grooved lines.
 P1 layer 1, depth 0.04. 74:22
19. Base angles (+PVA). Very soft fabric with grog, fine grits, and small
 20. vacuoles. Ext. and int. rough. Colour, int.: black; ext.: 5YR 4/3 (red-
 21. dish brown). Poorly fired.
Decoration: (no. 19 and 20) regular vertical grooves; (no. 21) two horizontal grooves below four punctate impressions.
 P1 layer 1, depth 0.02–0.05. All sherds 74:36.
22. Base angle, simple type (+PVA). Very soft fabric as no. 19–21 above; probably from same vessel.
Decoration: as no. 19 and 20 above.
 P1 layer 1, depth 0.06. 74:32
23. Rim sherd. Dia. about 13 cm. Soft/hard fabric with fine grits. Ext. and int. smooth. Colour ext., int., and core: black; large patch, ext., of 10YR 7/4 (very pale brown).
Decoration: haphazard grooved lines.
 P3 layer 1, depth 0.08. 74:64
24. Base angle, simple type. Dia. 4 cm. Fabric as 23 above; perhaps from same vessel.

Decoration: light (?) shell-impressions.

P3 layer 1, depth 0.05. 74:90

25. Wall sherd. Fabric soft/hard, very like no. 23 and 24 above.

Decoration: incised parallel lines.

P6 layer 1, depth 0.01–0.10 (from sieve). 74:84

Surface and Other Finds (Fig. 41)

- 26a. Complete Secondary Series Collared Urn. Dia. at rim 11.3 cm; Ht.

- 26b. 10.5 cm; Dia. at base 7.5 cm. Fabric very soft, friable with small vacuoles and grits. Ext. and int. rough. Colour, ext. and int.: 7.5YR 5/4 (brown) to 10YR 5/4 (yellowish brown); thin black core. The vessel is very irregularly shaped, the collar being particularly variable (compare 26a with 26b). The thickening of the collar does not extend up to the rim.

Undecorated.

W2, (Grid 51/88) depth: about 0.05 below the B/C soil horizon, extending 20 cm into the B horizon. 73:1308 and 73:1161

27. Wall sherd (+PVA). Fabric soft with many vacuoles, grit, and sand. Ext. smoothed; int. rough. Colour, int.: 10YR 3/3 (dark brown); ext.: 7.5YR 4/4 (dark brown); thick black core.

Decoration: one grooved line and traces of two angled grooved lines.

Grid 57/30, from top of stripped surface. 73:3055

28. Wall sherd. Fabric soft/hard with few grits. Ext. and int. rough. Colour, ext.: 10YR 6/3 (pale brown); int. and core: black.

Decoration: low cordon with two rows of comb-impressions below. Weathered.

W22, (Grid 57/92) depth: top of stripped surface. 73:1500

Feature P59 (Fig. 42)

1. Wall sherd. Fabric soft with many grits and grog temper. Ext. and int. rough. Colour, ext.: 2.5Y 5/1 (grey); int.: black.

Decoration: three rows of stabbed impressions, made with sharp tool.

P59 layer 1, (Grid 108/202) depth 0.04. 74 : 1382.

2. Wall sherd. Fabric soft/hard with grits and many small vacuoles. Ext. and int. smooth. Colour, ext. and int.: 5YR 5/2 (reddish grey).

Decoration: horizontal scored line separates opposed diagonal scored lines.

P59 layer 1, (Grid 102/202) from sieve. 74:1390

3. Rim sherd, Dia. about 10 cm. Fabric soft with many grits and (?) grog. Ext. and int. very rough. Colour, ext. and int.: 10YR 5/2 (greyish brown).

Decoration: slight line below rim; shallow, random stabbed impressions.

P59 layer 1, (Grid 108/201) depth 0.06. 74:1395

4. Wall sherd. Fabric soft with many vacuoles. Ext. and int. smooth. Colour, ext. and int.: black.
Decoration: three (traces of a fourth) deep scored lines.
P59 layer 1, (Grid 108/201) depth 0.04. 74:1396
5. Wall sherd. Fabric very similar to no. 3 above.
Decoration: rows of impressions made with blunt tool.
P59 layer 1, (Grid 108/201) from sieve. 74:1398
6. Wall sherd. Fabric soft/hard with fine grits. Ext. and int., smooth, sandy. Colour, ext. and int.: black.
Decoration: stabbed impressions.
P59 layer 1, (Grid 108/201) from sieve. 74:1398
7. Base sherd, Dia. about 16 cm. Fabric soft/hard with large grits and sand. Ext. and int. rough, sandy. Colour, ext.: 2.5YR 4/6 (red); int. and core: black.
Decoration: rows of stabbed impressions.
P59 layer 1, (Grid 107/201) depth 0.05. 74:1454
8. Wall sherd. Fabric soft/hard with grit and sand. Ext. and int. smooth, sandy. Colour, ext.: 10YR 5/3 (brown); int. and core: black.
Decoration: rows of close punctate impressions.
P59 layer 1, (Grid 108/201) depth 0.06. 74:1455
9. Wall sherd. Fabric soft/hard with many grits. Ext. and int. smooth. Colour, ext.: 10YR 5/2 (brown); int. and core: black.
Decoration: five rows of deep (3 mm) fingernail-impressions.
P59 layer 1, (Grid 108/201) depth 0.06. 74:1455
10. Rim sherd. Fabric soft with grog. Ext. and int. smooth. Colour, ext. and int.: 10YR 6/4 (light brown); thick black core.
Decoration: top of rim: trace of transverse fingernail-impression; ext.: scored horizontal lines.
P59 layer 1, from sieve. 74:1461
11. Wall sherd. Fabric soft with many grits and sand. Ext. and int. rough, sandy. Colour, ext. and int.: 5YR 4/4 (reddish brown).
Decoration: 10 horizontal scored lines with, to left, parts of four diagonal scored lines and, to right, one opposed diagonal scored line.
P59 layer 1, (Grid 108/201) from sieve. 74:1450
12. Wall sherd. Fabric soft/hard with large grits and sand, similar to no. 7 above. Colour, ext.: 2.5YR 4/6 (red) with patches of 7.5YR 5/2 (brown); int. and core: black.
Decoration: three horizontal grooved lines below two rows of stabbed impressions.
P59 layer 1, (Grid 107/202) depth 0.08. 74:1458
13. Wall sherd. Fabric soft/hard with large grits and small vacuoles. Ext. and int. rough, "corky". Colour, ext. and int.: 7.5YR 5/4 (brown).
Decoration: four grooved lines below shallow punctate impression.
P59 layer 1, (Grid 107/202) depth 0.03. 74:1459
14. Wall sherd. Probably same vessel as no. 13 above.

- Decoration:* three rows of punctate impressions.
P59 layer 1, (Grid 108/203) depth 0.04. 74:1462
15. Wall sherd. Probably same vessel as no. 13 above.
Decoration: two rows punctate impressions made with sharpened tool.
P59 layer 1, (Grid 107/202) depth 0.03. 74:1459
16. Wall sherd. Probably from same vessel as no. 13 above.
Decoration: two punctate impressions below part of grooved line.
P59 layer 1, from sieve. 74:1463
17. Wall sherd, soft/hard fabric, fine grits. Ext. and int. smooth. Colour, ext. and int.: 7.5YR 4/4 (brown/dark brown).
Decoration: short, deep (3+ mm) fingernail-impressions.
P59 layer 1, from sieve. 74:1463
18. Base angle, concave type; Dia. about 10 cm. Fabric soft with many large grits and (?) grog. Ext. and int. rough. Colour, ext. and int.: 10YR 5/3 (brown). Possibly same vessel as no. 3 above.
Decoration: two shallow punctate impressions.
P59 layer 1, (Grid 108/201) depth 0.04 74:1465
19. Wall sherd. Fabric soft/hard with grits. Ext. and int. smooth. Colour, ext.: 7.5YR 4/4 (brown); int. and core: black.
Decoration: alternate rows of punctate impressions and grooved lines.
P59 layer 1, (Grid 108/201) depth 0:05. 74:1467
20. Rim sherd with slight flattened internal bevel; Dia. about 12 cm. Fabric soft with sand and fine grits. Ext. and int. smooth, sandy. Colour, ext. and int.: black to very dark grey.
Undecorated.
P59 layer 1, (Grid 108/203) depth 0.03. 74:1473
21. Wall sherd. Fabric soft/hard with grit, (?) grog, and sand. Ext. and int. rough, sandy. Colour, ext.: 7.5YR 4/4 (brown/dark brown); int. and core: 7.5YR 5/2 (brown).
Decoration: random, deep (3 mm) stabbed impressions.
P59 layer 1, (Grid 108/202) depth 0.07. 74:1474
22. Wall sherd. Fabric soft/hard with grit and sand. Int. and ext. sandy. Colour, int. and ext.: 10YR 6/3 (pale brown).
Decoration: parts of slight grooved/scored opposed lines. Weathered.
P59 layer 1, (Grid 108/202) from sieve. 74:1477
23. Base sherd, concave type. Fabric soft with sand and grit. Ext. and int. rough. Colour, ext.: 10YR 6/3 (pale brown), int. and core: black.
Decoration: two deep (3+ mm) impressions on ext. of base angle.
P59 layer 1, (Grid 108/202) from sieve. 74:1477
24. Wall sherd. Very soft fabric with large grits, (?) grog, and many vacuoles. Ext. rough; int. lost. Colour, ext.: 10YR 7/3 (very pale brown); core: grey.
Decoration: two rows of punctate, round impressions.
P59 layer 1, (Grid 108/202) from sieve. 74:1477
25. Wall sherd. Fabric soft/hard with sand and few grits. Ext. and int.

- smooth, sandy. Colour, ext.: 7.5YR 5/4 (brown) with redder patches; int. and core: black.
Decoration: five horizontal grooved lines.
 P59 layer 1, (Grid 108/202) from sieve. 74:1482
26. Rim sherd; Dia. 16 cm. Soft/hard fabric with few black grits. Ext. and int. smoothed; top of rim flattened. Colour, ext., and int.: 10YR 7/4 (very pale brown).
Decoration: stab-filled triangle bounded by multiple grooved lines.
 P59 layer 1, (Grid 108/202) depth 0.10. 74:1483
27. Wall sherd. Soft/hard fabric with sand and grit. Ext. and int. smooth, slightly sandy. Colour, ext.: 7.5YR 6/2 (pinkish grey); int. 10YR 6/2 (light brownish grey).
Decoration: two horizontal grooved lines, two diagonal grooved lines, and shallow punctate impressions.
 P59 layer 1, (Grid 108/202) from sieve. 74:1488
28. Wall sherd. Fabric as no. 26 above, probably from same vessel.
Decoration: stabbed impressions.
 P59 layer 1, (Grid 108/202) from sieve. 74:1488
29. Wall sherd. Fabric soft/hard with sand, grit, and grog. Ext. and int. smooth, sandy. Colour, ext.: 10YR 4/4 (reddish brown); int. and core: black to very dark brown.
Decoration: three rows deep (4+ mm) stab impressions above reserved zone; single row of stab impressions below reserved zone.
 P59 layer 1, (Grid 108/202) depth 0.07. 74:1498
30. Wall sherd. Fabric soft/hard with sand and grit. Ext. and int. smooth, sandy. Colour, ext.: 5YR 5/3 (reddish brown); int. and core: black.
Decoration: horizontal grooved lines.
 P59 layer 1, (Grid 108/203) from sieve. 74:1496
31. Wall sherd. Fabric soft/hard with pale grits and sand. Ext. and int. smooth, sandy. Colour, ext. and int.: 7.5YR 4/4 (brown/dark brown).
Decoration: three horizontal scored lines below three rows of stab impressions.
 P59 layer 1, (Grid 108/203) depth 0.05. 74:1555
32. Two wall sherds. Fabric soft/hard with much sand and grit. Ext. and int. rough, sandy. Colour, ext. and int.: 7.5YR 4/4 (brown/dark brown).
Decoration: stab impressions made with sharpened tool.
 P59 layer 1, (Grid 108/202) depth 0.08. 74:1495
33. Wall sherd. Same vessel as no. 30 above.
Decoration: part of grooved line and circular punctate impression.
 P59 layer 1, (Grid 108/203) from sieve. 74:1496
34. Rim sherd. Fabric soft/hard with fine grits and sand. Ext. and int. smooth, sandy. Colour, ext. and int.: black.
Decoration: top of rim, slight (?) fingernail-impressions; ext. and int., deep scored lines.
 P59 layer 1, (Grid 108/203) from sieve. 74:1496

Discussion

With the exception of one sherd and a complete vessel of Collared Urn type, a residual Early/Middle Neolithic sherd, and four Beaker sherds, all the pottery found in the features described in this chapter is of Grooved Ware.

Early/Middle Neolithic

One sherd of probable Early or Middle Neolithic type was found in layer 2 of the ring-ditch (Fig. 37:24). On stratigraphic grounds it is therefore residual. The everted rim and soft, reddish fabric is most reminiscent of the sherds found in the earlier Neolithic house foundation trenches (FNG 1:fig. 6, 9, 10, and 12). Dr. Smith assigned the pottery from the house to her Grimston/Lyles Hill series (FNG 1:31–33).

Grooved Ware

This large collection can be conveniently divided into three groups: (a) the material from Feature Divisions 1 to 9, (b) the peripheral Division 10, and (c) the outlying pit P59. Each assemblage will be considered separately.

Feature Divisions 1 to 9 (Fig. 37:1–40:15)

FABRIC

The uniformity of vessel size and shape noted below is not reflected in the fabrics, which vary considerably. Hardness, usually a reflection of firing time and temperature, ranges from “extremely soft” to “soft/hard”. The majority of sherds, however, are considered “soft” (for definition of terms see p. 69).

Most sherds appear to have been tempered, usually with small, crushed stone grits, although sand and grog were also used. In all cases, however, it was difficult to distinguish between the natural and the deliberately added non-plastic inclusions. Very few sherds appear to have contained significant proportions of vegetable temper.

Colour varies considerably, even on individual sherds, producing a mottled effect. Interiors are usually darker than exteriors and approximately half of the sherds have black cores.

FORM AND DECORATION

With two exceptions (Fig. 37:10 and 40:8), the sherds from Feature Divisions 1 to 9 belong to the straight, splay-sided Clacton type. No obviously closed

forms of the Durrington Walls type were found. Rim profiles are generally simple, and internal decoration is not elaborate (cf. Fig. 37:3, one groove; Fig. 37:16, one groove; Fig. 38:17, one groove; Fig. 39:1, vertical fingernail; and Fig. 41:15, grooves and punctate impressed decoration). Base sherds are usually of the simple or slightly concave types. Rim-top impressions are found on Fig. 37:16; 39:13; and 40:8 and 18. The rim of Fig. 39:16 has been pinched.

The repertoire of external motifs is varied. The principal elements include:

1. Incised or grooved chevrons or herringbone (Fig. 37:16 and 20; Fig. 38:1; Fig. 39:15; and Fig. 40:1, 4, and 20).
2. All-over grooved lines (Fig. 38:21; Fig. 39:16 and 21; and Fig. 41:1).
3. All-over shell-edge impressions (Fig. 38:30 and 31; and Fig. 41:3, 4, 11, and 12).
4. Impressed vertical cordons (Fig. 38:1 and 8; Fig. 39:26; and Fig. 40:(?) 21, 22, 23, 24, 28, and 30).
5. Impression-filled bands within multiple, horizontal, grooved lines (Fig. 37:16 and (?) 38; Fig. 39:4–6; and Fig. 41:8).
6. Stab or groove-filled triangles (Fig. 38:1).
7. Filled rectangles (Fig. 38:14 and 24).
8. Comb impressions (Fig. 39:27; and Fig. 40:25).
9. Spaced pinching (Fig. 37:36; and Fig. 40:25).
10. Circular impressions (Fig. 40:14 and 18).
11. Sundry, probably random, impressions (Fig. 37:14; and Fig. 38:9).
12. Applied flat bosses (Fig. 37:32).

Mention should also be made of the horizontal lug with two vertical perforations, both of which appear to be non-functional (Fig. 39:2).

Insofar as the assemblage from Divisions 1 to 9 can be placed within any recognized substyle, the two main contenders must be Clacton and Durrington Walls. The straight, splay-sided shape, and the use of multiple grooved or incised chevrons and herringbone, are the two main points in favour of Clacton; the few single and multiple grooved lines are also consistent with that substyle. Internal decoration is, however, much more restrained than is normal Clacton usage. Moreover, certain important Clacton features are noticeably absent, namely, the complex plastic decoration on the internal rim bevel, dot-filled motifs, opposed grooves, and deep fingertip rustication.

Durrington Walls elements include the repeated use of plain and impressed vertical and horizontal applied cordons, groove-filled triangles, rows of impressions, incised lines, and rim-top decoration (cf. Wainwright and Longworth 1971:fig. 23). The principal diagnostic feature absent is the closed or recurved rim form.

The forms exhibited in Divisions 1 to 9 do not appear to be entirely typical of either Durrington Walls or Clacton, the recurved rim of the former and the thick, enlarged rim of the latter both being absent. Decoration, however,

features many more Durrington designs than Clacton ones. It is tentatively suggested, therefore, that on the basis of decoration alone, the Fengate assemblage from Feature Divisions 1 to 9 belongs to perhaps a regional variant of the Durrington Walls substyle.

Feature Division 10 (Fig. 41:16–25)

FABRIC

The fabrics in this Feature Division are in the main similar to those found in Divisions 1 to 9. Hardness varies from “extremely soft” to “soft/hard”. Colour also varies considerably, and black cores are common. Grits are few and fine, but grog and sand additives are also found.

FORM AND DECORATION

Only straight, vertical, or splay-sided forms are found; base angles are simple or slightly concave. The repertoire of decorative motifs is highly reminiscent of Feature Divisions 1 to 9, particularly the herringbone of Fig. 41:16 and the all-over grooved lines of Fig. 41:23. The deeply grooved base sherds of Fig. 41:19, 20, and 22 (perhaps from the same vessel) are not found elsewhere on the site.

The assemblage is too small in itself to be classed with either Durrington Walls or Clacton. But since it has so many points in common with Divisions 1 to 9 it could, very tentatively, be placed within the Durrington substyle.

Feature P59 (Fig. 42:1–34)

The pottery from this isolated feature appears to be less weathered than much of that from the main settlement. It was found in a very shallow feature densely packed with burnt and unburnt flint waste and much charcoal. It would be reasonable to assume, therefore, that the Grooved Ware sherds of Fig. 42 are strictly contemporary and were probably discarded simultaneously.

FABRIC

The fabrics of this assemblage are considerably harder than those of the two just discussed: most sherds are “soft/hard”, some are “soft”, less than about 5 per cent are “very soft”, and none is “extremely soft”. Grits are generally larger and more frequently employed than in the main settlement, and grog is also an important additive. Black cores are again found and colour, too, varies considerably. Exterior finish is smooth and of quite a high quality.

With one notable exception (Fig. 42:26) the forms are simple, straight, vertical, or splay-sided. The three base angles are slightly concave. Internal decoration is rare (Fig. 42:34), and rim-top decoration is absent.

Decoration is characterized by a much greater use of punctate impressions, either as stabs or dots, invariably arranged in columns, rows, or diagonal lines; with the possible exception of Fig. 42:34, random all-over impressions are absent. Chevrons, herringbone, fingertip, or shell-edge motifs are all absent.

Care must be taken not to over-interpret such a small assemblage, and too much weight should not be given to motifs made noticeable by their absence. Nevertheless, it is quite clear that the fabric and external decoration of the pottery from this isolated feature differ markedly from those of the pottery of the main settlement.

Once again it is difficult to place the assemblage within one of the recognized substyles. External decorative motifs generally reflect Clacton rather than Durrington usage, especially in the greater use of punctate impressions or stabs. By contrast, the principal Durrington element found elsewhere on the site, the impressed, applied vertical cordon (and the decorated rim-top), is absent.

Bearing in mind the danger of attributing too much to negative evidence, it can be said that this assemblage has little in common with the Durrington substyle. It does, however, appear to have some, but not many, Clacton traits.

Local Significance and Parallels

Grooved Ware has been found on the following sites in the area:

1. FENGATE

Six sherds of Grooved Ware are described and illustrated by Leeds (1922:226–27 and fig. 6). These almost certainly came from domestic rather than funerary contexts, and have been assigned to the Clacton substyle by Longworth (Wainwright and Longworth 1971:236–38). The chief decorative motifs found are multiple grooved lines and grooved chevrons, reminiscent, perhaps, of Fig. 37:16.

2. FENGATE, TEBBS PITS

Sherds from one vessel, considered by Longworth to belong to the Clacton substyle, were found in a small pit, associated with a cremation. Grooved herringbone is again the dominant decorative motif (Wainwright and Longworth 1971:281).

3. ORTON LONGUEVILLE

This site is situated on the River Nene Gravels about two miles west of Peterborough (for references see Wainwright and Longworth 1971:278). Neolithic finds include sherds of Mortlake and Grooved Ware. The latter, being decorated with oval impressions, have been grouped with the Clacton substyle. Recent excavations in the immediate neighbourhood have produced sherds of Mortlake Ware only, despite the stripping of very large areas. It would appear that, in the Peterborough region at least, where Grooved Ware is associated with Peterborough pottery, the latter is usually found in much greater quantities.

4. BARHOLM, LINCOLNSHIRE

This is a Welland Valley Gravel site consisting of post-holes and pits filled with occupation debris. The internal decoration of the Grooved Ware sherds is more complex (single or multiple grooves with or without punctate impressions) and more frequently found than at Fengate. Externally, all-over oval punctate impressions are found, together with all-over paired grooved horizontal lines, oval impression-filled zones (including lozenges), diagonal multiple impressions, impression-filled bands within multiple grooved lines (Fengate motif 5), and plain or impressed cordons. Perhaps the most noteworthy and commonest decorative motifs are the V-shaped undecorated cordons which are applied to the exterior of an otherwise plain, straight-sided large jar. The cordons, which are finger-smoothed, are regular in profile and size, but are applied irregularly, so that the reserved spaces between them vary in width considerably. A similar internal cordon, just below the lip, is also found.

The fabric of the Welland Valley Grooved Ware is generally harder than that at Fengate (including the pre-war finds). Using the terminology of this report, it would be considered "soft/hard". There is also a large variety of fabrics and finishes. Although the repertoire of shapes, with the exception of the larger cordoned vessels, is generally similar to that found at Fengate, the decorative motifs are not as similar as might be expected from the proximity of the two sites.

The material from Fengate and Orton Longueville is noteworthy for the recurrent use of herringbone. That this motif recalls Peterborough usage has been pointed out by, among others, Longworth (Wainwright and Longworth 1971:244). Many motifs, and particularly their zoned arrangement, also suggest Beaker practice; indeed Clarke (1970:269) sees a combination of both Developed Southern Beaker and Peterborough (specifically Fengate Ware) traditions as being ancestral to Grooved Ware in the southeast. These, however, are stylistic arguments which cannot be tested in the field, until such critically important settlement sites as Lawford, Essex — where pottery with, apparently, characteristics of Fengate and Grooved Wares was found — and those in the Welland valley, are fully published. So far Fengate (which, if any site can, must test Clarke's

hypothesis) has shown a clear spatial separation between the Grooved Ware, Beaker, and Peterborough ceramic traditions.

Beaker

Four small, weathered, probable Beaker sherds were found in the filling of grave 2 (Fig. 37:22, 27, 28, and 31). The fabric of Fig. 37:22, 28, and 31 is very soft and friable, not dissimilar to some of the Grooved Ware sherds discussed above. The decoration, however, is more regular than that of Grooved Ware, the lines being lightly, but evenly, incised. The sherd illustrated in Fig. 37:27 is harder than any of the Grooved Ware sherds; the decoration is incised cross-hatching arranged in a thin zone defined by at least one incised horizontal line, below the rim. The slight internal thickening is also found on Fig. 37:22 and 31.

All four sherds were found in the upper filling of grave 2 (Fig. 25) at depths no greater than 0.50 m. The depth of the ring-ditch at this point was 1.07 m. The sherds, as their weathered condition attests, were probably present in the topsoil used to fill the grave. They therefore provide a *terminus post quem* for the inhumation. The graves were both cut into the ring-ditch when it had approximately half silted-up, and postdate the primary context of layer 3 in which a plain Collared Urn sherd was found (see p. 97).

The three softer sherds (Fig. 37:22, 28, and 31) lack the characteristic red-black-red (Clarke 1970:fig. xiii) cross-section observed on many of the Beaker sherds found in 1971 (ENG 1:fig. 10) but the harder sherd, Fig. 37:27, although clearly distinguished from the large Grooved Ware assemblage on grounds of fabric, decoration, and stratigraphy, is by no means typical of local Beaker pottery either. The fabric and decoration, especially the careless execution of the decoration, do not find many published counterparts in the region as a whole (cf. Coombs 1973:25 and fig. 15b).

Attention has been drawn to the poor quality of the sherds' fabric, which, together with the somewhat inferior execution of the incised decoration and the absence of the familiar Beaker comb-impressions, tentatively argue in favour of a later Southern, perhaps S4, attribution (Clarke 1970:234). The rim profiles exhibit some S4 traits, especially Fig. 37:22 which recalls the "swan's neck" treatment discussed by Clarke (1970:238). Attribution within the S4 Beaker series would be consistent with that group's known southern Fen-margin distribution.

Clarke notes (1970:242) that "The definition of the Final Southern beaker group is such that it can hardly be assigned a very precise beginning or end." The uncertain attribution of the Fengate sherds gives this warning extra importance; however, Clarke's "guess date" of ca 1550-1400 B.C. is certainly consonant with the stratigraphic position of grave 2. Finally, the recently proposed regional scheme of Lanting and van der Waals (1972) does not, strictly speaking, include Peterborough. It would be reasonable, however, to include the site in their East Anglian-Kentish area (Lanting and van der Waals 1972:fig. 2 and 38-39), in which case the S4 sherds would belong to their final step 7.

Collared Urn

One complete vessel (Fig. 41, 26a and b) and one collar sherd (Fig. 37:29) were found. Both are undecorated, are of similar fabric, and belong to Longworth's Secondary Series.

The contents of the complete vessel — charcoal and highly calcined bone flecks — had partly spilled in antiquity, covering the area for a metre around with a thin spread of finely crushed bone fragments. None of these fragments was found in the nearby feature W28 (Fig. 34) which contained sherds of plain Grooved Ware. On purely stratigraphic grounds, therefore, the deposition of the urn must have taken place after the filling of the Division 8 feature.

The urn collar sherd was found in primary contexts at the bottom of the sieved "control" section of the ring-ditch, layer 3. The sherd has been examined by Dr. I. F. Smith who confirms the attribution suggested here. The fabric and form of both urns are so similar that there appears to be no reason to doubt their broad contemporaneity.

Secondary Series Collared Urns are commonly found in the area, usually in the course of gravel digging. One such find was the discovery in 1971 of a cremation pit and separate, but nearby, inhumation at Pilsgate, near Stamford, Lincolnshire, on the river Welland (TF 046069). The inhumation was crouched and grave goods consisted of 12 amber drum- and disc-shaped beads and a flint blade knife. The cremation pit contained sherds of a Food Vessel of Yorkshire Vase type, an associated Secondary Series Collared Urn, and four calcined plano-convex knives (Pryor 1974c:fig. 3). A radiocarbon date from the cremation pit is expected soon.

HAR-400 (1460 ± 120 bc) was taken from the contents of the complete urn. The date is slightly earlier than the post-1400 B.C. date suggested by Longworth for Secondary Series Urns (1961:290); but Longworth's estimate was reached without the benefit of the many radiocarbon dates available today. A new and important series of radiocarbon dates has recently been published by H. S. Green (1974). These relate to the area around Milton Keynes, Buckinghamshire. One site, Cotton Valley, Willen, is of particular interest in that HAR-471 (1340 ± 160 bc) provides a *terminus ante quem* for the deposition of a Primary Series Collared Urn (Green 1974:12). More radiocarbon dates are urgently needed to clarify the relationship of Primary to Secondary Series Urns in the region.



Fig. 37 Storey's Bar Road subsite, Area I, pottery: Early/Middle Neolithic (no. 24); Beaker (no. 22, 27, 28, and 31); Grooved Ware (no. 1-21, 23, 25, 26, 30, and 32-38); Secondary Series Collared Urn (no. 29).



Fig. 38 Storey's Bar Road sub-site, Area I, pottery: Grooved Ware.

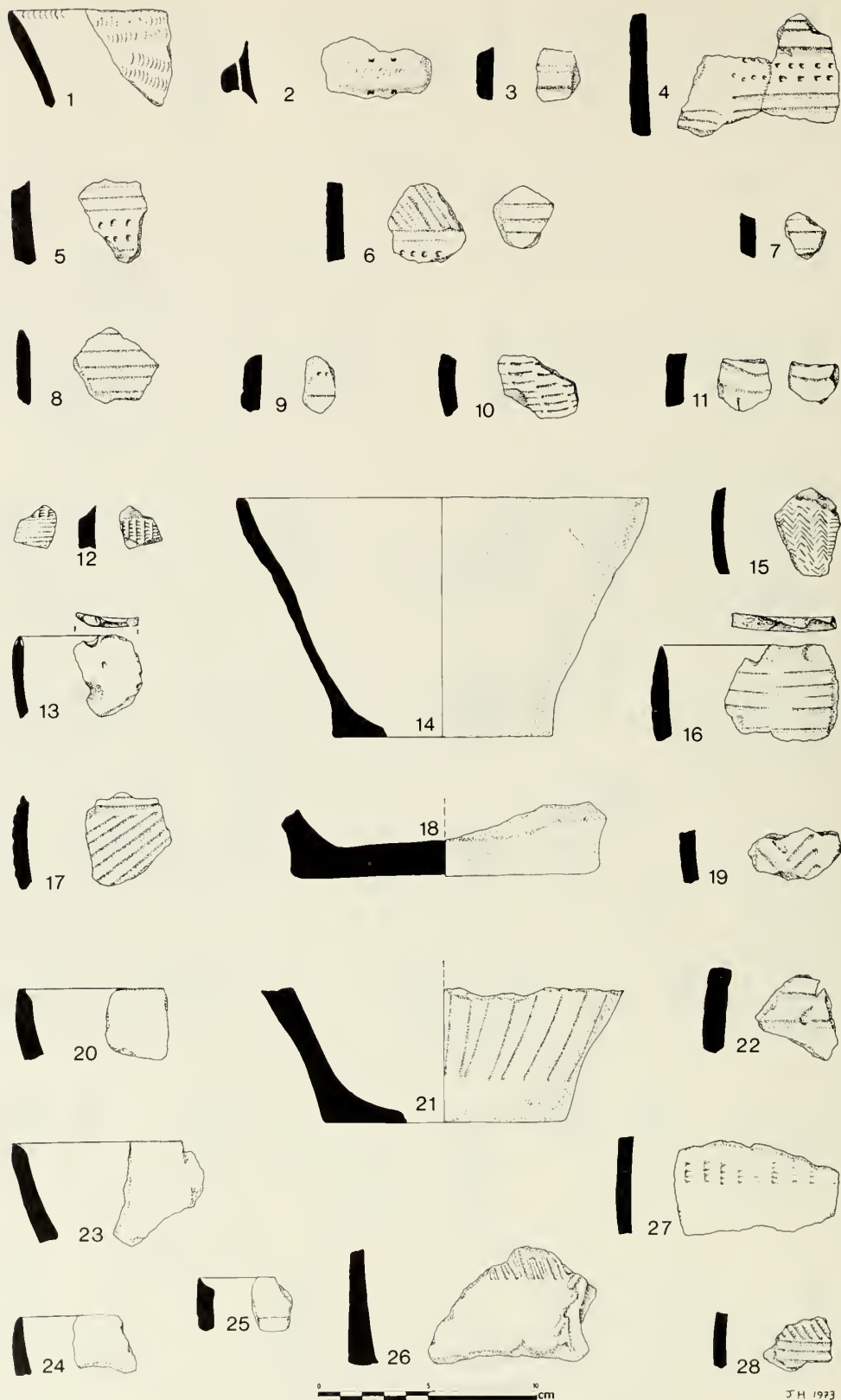


Fig. 39 Storey's Bar Road sub-site, Area I, pottery: Grooved Ware.



Fig. 40 Storey's Bar Road subsite, Area I, pottery: Grooved Ware.



Fig. 41 Storey's Bar Road sub-site, Area I, pottery: Grooved Ware (no. 1-25, 27, and 28); Secondary Series Collared Urn (no. 26a and b).



Fig. 42 Storey's Bar Road subsite, Area V, pottery: Grooved Ware.

Chapter 4

Late Neolithic/Bronze Age Flints

Catalogue of Illustrated Flints

NOTES ON THE FIGURE DESCRIPTIONS Figures 43 to 49 illustrate selected examples of all the implement types found in the later Neolithic/Bronze Age features of the Storey's Bar Road sub-site, Area I. Only the projectile points and arrowheads have been illustrated in full. Depths are given in metres below the stripped ground surface.

Fig. 43:1–11 projectile points, single barb, pointed tip

1. Black flint; weathered cortex in angle of barb.
B7 layer 1, depth 0.20. 73:46
2. Light grey mottled flint; no cortex.
B9 layer 1. 73:301
3. Black flint; no cortex.
B3 layer 1, (Grid 1/16) depth 0.10. 73:273
4. Calcined; no cortex. From topsoil, unstratified.
5. Black flint; no cortex.
Y1 layer 1. 73:1174
6. Black/dark brown flint; slight, thin cortex.
W17 layer 1, (Grid 73/91) from top of stripped surface. 73:1324
7. Black flint; no cortex. Tip broken.
W17 layer 1, (Grid 66/87) depth 0.05. 73:1145
8. Black/brown flint; no cortex.
Found in topsoil.
9. Black flint; no cortex. A finely retouched fragment.
W23 layer 1, (Grid 37/116) depth 0.05. 73:2494
10. Dark brown/black flint; no cortex.
B2 layer 1, (Grid 9/11). 73:159
11. Dark brown/black flint; no cortex.
P3 layer 1, depth 0.01. 74:54

Fig. 44:1–4 projectile points, single barb, blunt tip

1. Light brown flint; no cortex. Tip steeply retouched.
Top of stripped surface. 73:3

2. Brown/black flint; no cortex. Fine, steep retouch along both faces.
W17 layer 1, (Grid 65/89) depth 0.60. 73:2003
3. Calcined flint; no cortex. Tip steeply retouched.
B50 layer 1, (Grid 22/22) depth 0.15. 73:570
4. Grey/black flint; thin cortex. Striking platform at tip is unretouched.
B2 layer 1, (Grid 2/13). 73:124

Fig. 44:5–12 projectile points, transverse type

5. Grey/black flint; no cortex. Heavy, battered retouch on sides, sharp transverse cutting edge.
W17 layer 1, (Grid 64/94) depth 0.18. 73:1713
6. Black flint; no cortex. Flat edge retouch.
B49 layer 1, (Grid 6 east/28). 73:149
7. Grey/light grey mottled flint; no cortex. Steep, transverse cutting edge. From top of stripped surface at Grid 30/0; not included in Feature Division 7. 73:188
8. Light brown mottled flint; no cortex. Dubious transverse cutting edge.
W19 layer 1, (Grid 62/91) depth 0.02. 73:1555
9. Black flint; no cortex. Fine, flat edge retouch.
B3 layer 2, (Grid 1/17) depth 0.80. 73:653
10. Grey flint, no cortex.
B12 layer 1, (Grid 15/27) depth 0.15. 73:543
11. Black flint, no cortex. Fine, steep edge retouch; sharp, battered cutting edge.
W1 layer 1, (Grid 48/89) depth 0.30. 73:2558
12. Black flint; no cortex. Fine, steep retouch.
W17 layer 1, (Grid 70/93) depth 0.30. 73:1743

Fig. 45:1–3 projectile points, transverse type (continued)

1. Brown/black flint; no cortex. Broken at proximal end. Fine, steep bifacial retouch.
W31 layer 1, (Grid 42/104) depth 0.08. 73:3032
2. Grey/brown mottled flint; no cortex. Sharp, transverse cutting edge, flat retouch.
W17 layer 2, (Grid 63/91) depth 0.91. 73:2096
3. Black flint; no cortex. Flat, battered retouch.
B7 layer 1, (Grid 16/33) depth 0.32. 73:55

Fig. 45:4 barbed-and-tanged arrowhead

4. Grey/black flint; no cortex. Fine, flat bifacial retouch.
B10 layer 1, (Grid 3/22). 73:300

Fig. 45:5 leaf-shaped arrowhead

5. Black/grey mottled flint; no cortex. Very flat, fine retouch; distal portion lost.
W24 layer 1, (Grid 52/103) depth 0.02. 73:2126

Fig. 45:6–15 serrated flakes

6. Dark grey mottled flint with imperfections. Serration flakes removed from dorsal face only; clear lustre on ventral cutting edge.
(Grid 57/97) from W quadrant surface, not included in Division 5. 73:804
7. Dark brown flint; cortical. Very fine serration flakes on dorsal face; cutting edge worn. Clear lustre on both dorsal and ventral faces near cutting edge.
W29 layer 1, (Grid 39/98) depth 0.38. 73:2824
8. Dark grey mottled flint; no cortex. Broken at distal end. Serration flakes removed on both faces of left edge; on dorsal face only of right edge. Both edges worn. No lustre.
W29 layer 1, (Grid 40/97) depth 0.37. 73:2980
9. Dark grey flint; thin cortex. Large serration flakes removed from dorsal face only; lustre on both faces.
W15 layer 1, (Grid 57/63). 73:912
10. Grey/light grey mottled flint; no cortex. Irregular serration flakes removed from dorsal face only. Clear lustre on ventral face cutting edge.
W1 layer 2, (Grid 55/95) depth 0.80. 73:2697
11. Black flint; no cortex. Serration scars on dorsal face only, right side more worn than left. Diffuse lustre on both faces.
W32 layer 1, depth 0.16. 73:3151
12. Black/grey mottled flint; cortical. Serration scars on dorsal face only; right side worn more than left. Clear lustre on ventral cutting edge.
P10 layer 1, (Grid 74/131) from sieve. 74:163
13. Black/grey mottled flint; no cortex. Serration flakes removed from ventral face on left side. Clear lustre along cutting edge of ventral face.
P10 layer 1, (Grid 74/131) depth 0.15. 74:176
14. Grey/dark grey, mottled flint; cortical. Serration flakes removed from dorsal face of left side. No lustre.
P10 layer 1, (Grid 74/131) depth 0.07. 74:154
15. Light grey, mottled flint; no cortex. Serration flakes removed from dorsal face of right edge. Left edge very worn (step fracture). No lustre.
P10 layer 1, (Grid 74/131) depth 0.15. 74:172

Fig. 46:1–8 cores

1. Black/grey mottled flint; no cortex. Type A1, the striking platform in this

case being a positive flake surface.

B43 layer 1, (Grid 20/18) depth 0.09. 73:131

2. Black/grey mottled flint; cortical. Two striking platforms at right angles (type B3). One striking platform given scraper retouch.
W1 layer 1, (Grid 58/95). 73:2663
3. Grey flint; cortical; partially calcined. Single platform with flakes removed $\frac{4}{5}$ of way round (type A2).
W17 layer 1, (Grid 67/92) depth 0.36. 73:1763
4. Grey/light brown flint; no cortex. Core remnant, type A1.
W17 layer 1, (Grid 66/68) depth 0.45. 73:1995
5. Light grey/black flint pebble; weathered cortex. Reused as scraper. Flakes removed $\frac{3}{5}$ of way round platform (type A2).
W17 layer 2, (Grid 64/91) depth 0.50. 73:2030
6. Black flint; no cortex. Keeled core remnant with flakes removed from both directions (type D); also one other small striking platform or heavily retouched face.
B3 layer 1, (Grid 2/17) depth 1.15 73:259
7. Light brown/grey flint; weathered cortex. Platform prepared (three incomplete flake scars); flakes removed $\frac{4}{5}$ of way round (type A2).
W1 layer 1, (Grid 56/71) depth 0.25. 73:773
8. Black flint; cortical. Two keeled platforms, one with flakes removed both ways, one with flakes removed one way (type D).
W28 layer 1, depth 0.30. 73:1620

Fig. 46:9–12 piercers

9. Dark grey flint; no cortex. Retouch on dorsal face only.
W24 layer 1, (Grid 51/94) depth 0.20. 73:2451
10. Grey/brown flint; no cortex. Tip carries bifacial retouch.
W17 layer 1, (Grid 69/88) depth 0.22. 73:1687
11. Black/grey mottled flint; no cortex. Broken flake. Steep, fine, “nibble” retouch at “beak”.
W23 layer 1, (Grid 47/114) depth 0.40. 73:1871
12. Grey mottled flint; no cortex. Retouch on dorsal face only, except at the tip of “beak” where retouch bifacial. Tip slightly polished.
B12 layer 1, (Grid 15/27) depth 0.18. 73:537

Fig. 46:13 denticulated flake

13. Black/grey mottled flint; thin pebble cortex. Core rejuvenation flake used. Denticulation flakes removed from dorsal face; small wear scars on ventral face of working edge.
P59 layer 1, (Grid 108/202) top of stripped surface. 74:1375

Fig. 47:1-13 scrapers

1. Very pale grey flint; cortical. Disc scraper on flake.
B12 layer 1, (Grid 15/26) depth 0.02. 73:533
2. Black flint; no cortex. Disc scraper on flake.
B3 layer 5, (Grid 1/18) depth 1.25. 73:659
3. Black flint; traces of cortex. Short-end scraper on flake.
W24 layer 1, (Grid 53/100) top of stripped surface. 73:2120
4. Black flint; no cortex. Disc scraper on flake.
B12 layer 1, (Grid 15/27) depth 0.12. 73:539
5. Black flint; cortical. Disc scraper on flake.
B38 layer 1, (Grid 20/46). 73:639
6. Light grey flint; no cortex. Short-end scraper on flake.
B3 layer 5, (Grid 2/18) depth 1.85. 73:663
7. Black flint; weathered cortex. Short-end scraper on flake.
W24 layer 1, (Grid 53/107) depth 0.10. 73:1880
8. Black flint; thick cortex. "Thumbnail" short-end scraper on flake.
B3 layer 1, (Grid 2/17) depth 1.04. 73:256
9. Black/brown flint; cortical. "Thumbnail" short-end scraper on flake.
B quadrant, (Grid 10/15) top of stripped surface. 73:436
10. Light brown mottled flint; no cortex. Side scraper. Retouch flakes removed from ventral face.
R2 layer 1, (Grid 12/118) top of stripped surface. 73:2285
11. Black flint; thin cortex. Short-end scraper on flake.
R21 layer 1, (Grid 24/71) depth 0.05. 73:1153
12. Light grey mottled flint; no cortex. Short-end scraper on flake.
Topsoil, unstratified, unlocated.
13. Black flint; no cortex. Short-end scraper on flake.
P10 layer 1, (Grid 74/131) depth 0.12. 74:170

Fig. 48:1-2 scrapers (continued)

1. Grey mottled flint; no cortex. Long-end scraper on flake. Denticulate retouch along left side. End retouch very steep.
W1 layer 2, (Grid 61/94). 73: not numbered
2. Black flint with imperfections; no cortex. Long-end scraper on flake.
Steep end retouch. Nibble retouch/abrasion on left side; protrusion on left side retouched; possibly hafted(?).
W33 layer 1, (Grid 88/113) depth 0.05. 73:3209

Fig. 48:3-4 tanged blades

3. Grey mottled flint; no cortex. Proximal end, unifacially worked.
W1 layer 2, (Grid 61/93) depth 0.50. 73:1589

4. Black/grey mottled flint; no cortex. Tang (striking platform) steeply blunted. Left dorsal working edge shows clear lustre (heavy line in illustration); fine wear scars on ventral face.
R2 layer 1, (Grid 8/118) depth 0.15. 73:2291

Fig. 48:5-6 flakes with flat edge retouch

5. Black flint; no cortex. Bifacial flat edge retouch. Functional classification uncertain, perhaps crude transverse arrowhead.
W17 layer 1, (Grid 67/86) depth 0.20. 73:1666
6. Black/grey mottled flint; no cortex. Unifacial edge retouch; no wear.
B quadrant surface. 73:7

Fig. 48:7 flake with blunted back

7. Black/pale grey, mottled flint; no cortex. Bifacial retouch along back; cutting edge worn; fine bifacial retouch at (?) piercer tip.
W1 layer 2, (Grid 61/94) depth 0.20. 73:1587

Fig. 48:8-9 steeply retouched flakes or fabricators

8. Black flint with heat cracks; no cortex. Both edges steeply retouched on dorsal face; tip carefully retouched; no visible wear; possibly a fabricator.
B61 layer 1, (Grid 30/24) depth 0.07. 73:621
9. Black/grey mottled flint; cortex along left side. Retouch unifacial (dorsal) along right edge, bifacial at proximal and distal ends. Distal end and right edge show wear; proximal end heavily ground, particularly at tip.
P10 layer 1, (Grid 74/131) depth 0.12. 74:171

Fig. 49:1 utilized flake with bifacial retouch

1. Black/grey mottled flint; thick cortex. Right edge steeply retouched; left edge carries crude, irregular, flat retouch, partially bifacial. Tip carefully retouched unilaterally (dorsal).
W31 layer 1, (Grid 42/105) depth 0.05. 73:2336

Fig. 49:2 chopper/adze

2. Black/grey mottled flint; thin cortex. Battered cutting edge with angled retouch (? repair/sharpening). Formed on one large flake.
R1 layer 1, (Grid 5/110) depth 0.05. 73:1918

Fig. 49:3–4 polished flint axe fragments

3. Grey (Munsell 5Y N5/, “grey”) flint; traces of polished cortex (polished 4. surfaces shaded black in the illustration). No. 3: hinge fracture at distal end and end shock fracture at proximal end (Crabtree 1972: fig. p. 61). Extreme force of blow might suggest accidental breakage. No. 4: complete flake removed from the side of the axe; note the faceted profile. P10 layer 1, (Grid 74/131) depth 0.17. 74:138 (no. 3) and 74:177 (no. 4).

Description and Analysis

It is clear from the discussion of phasing and chronology in Chapter 2 that the settlement was occupied for a considerable length of time. It was decided, therefore, to analyse the flint industry by individual Feature Divisions, both to minimize error caused by conflating material of different periods, and, if possible, to distinguish different activity areas within the site. During this study it was impractical to separate the discussion of the individual divisions from the factual data. Consequently each Feature Division (and outlying features P9, P10, and P59) will be considered in two parts: discussion and description. Finally, the flint assemblage from the nodal settlement features of Divisions 1 to 9 will be considered as a single entity, to facilitate comparison with other sites.

Length is measured along the percussion axis (Speth 1972: fig. 1a–c, *not* a–b) and breadth at right angles to it. The degree of cortex cover is described using the system devised by Bradley (1970:346) in which the dorsal face of the flake determines its classification: primary flakes are wholly cortical, secondary are partly cortical, and tertiary are wholly non-cortical.

Scraper retouch angles are measured with a simple protractor goniometer and are given to the nearest 5 degrees. The angle measured is that between the retouched working edge and the ventral, or flake surface.

Cores and scrapers are classed after Clark (1960:216 and 120–21).

“Petit tranchet derivative arrowheads” are classed after Clark (1934). The term “projectile point” has, however, been used instead of “arrowhead”, since there is some doubt as to the original use of these artifacts. The original function of the leaf-shaped and barbed-and-tanged forms is not in doubt (Coles et al. 1973:pl. 30) and the term arrowhead is therefore retained.

Feature Division 1

The vast majority of finds from this Feature Division came from the northerly ditches (Fig. 14).

We found 529 flint artifacts. The majority of the assemblage consists of 334 (63%) waste flakes. The rest of the assemblage was composed of 14 scrapers (2.6%); three projectile points (0.6%) of types C2, G, and a fragment; 121 utilized flakes (23%); 51 pieces of irregular workshop waste (9.6%); one tanged blade (0.2%); two piercers (0.4%); and one leaf-shaped arrowhead fragment (0.2%).

Of the 143 implements found, an unusually high percentage (9.7%) can be associated with hunting (three projectile points and one fragment of a leaf-shaped arrowhead); scrapers form the dominant retouched tool category (9.7%) while utilized flakes account for no less than 84.6%. The two piercers found (1.3%) indicate that leather-working may have been practised. The figures of Tables 5 and 6 show that cortex was not a significant factor in selecting flakes for utilization. Short-end and disc scrapers are, as usual on the site, those most commonly manufactured.

To judge from the rather small sample obtained, it would appear that the linear ditches were not constructed immediately alongside any large flint "workshop" area. The small proportion of irregular workshop waste (9.6% of the total) and the larger quantities of secondary and tertiary flakes, indicate that initial core preparation and selection was undertaken away from the close vicinity of the ditches. The fact that only one core was found tends to support this view.

IMPLEMENTS (27% OF TOTAL)

Scrapers (14)

Class A (ii) (short-end)	7
Class C (disc)	3
Class D (ii) (side)	1
Class E (on broken flakes)	3

Of the unbroken scrapers one is primary, eight are secondary, and two are tertiary.

Utilized flakes (121)

Table 5 gives the breadth/length ratios of the 57 unbroken utilized flakes found. Of the 64 broken flakes found, 1.6% are primary, 37.5% are secondary, and 60.1% are tertiary. The average weight of all utilized flakes is 6.3 g.

Table 5 Feature Div. 1, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary					1		1.7
Secondary		4	8	6	4	3	43.8
Tertiary		6	10	8	4	3	54.5
%		17.5	31.6	24.6	15.8	10.5	

BY-PRODUCTS (73% OF TOTAL)

Apart from the type B2 core and the 51 pieces of irregular workshop waste, 197 unbroken waste flakes were found. The breadth/length ratios of the

waste flakes are given in Table 6. In addition to the unbroken waste flakes, 137 broken waste flakes were found. Of the broken waste flakes, 2.2% are primary, 21.2% are secondary, and 76.6% are tertiary. The average weight of all waste flakes is 1.7 g.

Table 6 Feature Div. 1, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary		1	7	1	7	3	11.0
Secondary		11	20	11	5	18	37.7
Tertiary	3	11	12	16	22	24	51.3
%	1.6	13.4	22.7	16.3	19.8	26.2	

Feature Division 2

The filling of the well produced 91 flint artifacts. The waste and utilized flake breadth/length ratio and cortex cover are given in Tables 7 and 8.

Of the total 91, six are scrapers (7%) of which three are short-end (A ii), one disc (C), one broken (E), and one hollow (F). The rest of the group is composed of two (2%) projectile points (Class D and H), 26 utilized flakes (29%), 44 waste flakes (48%), two (2%) cores (types C and D), nine pieces of irregular workshop waste (10%) and one hammerstone and core rejuvenation flake (1% each).

Implements form 38.4% of the total assemblage. Even in view of the rather scanty data, this is an unusually high figure (see Table 48) and would tend to suggest that there was no intensive flint-working in the immediate vicinity of the well. Four of the six scrapers found came from layer 5 (Fig. 17), at the bottom of the well.

Table 7 Feature Div. 2, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Secondary		1	1	3	2		38.8
Tertiary		4	3	3	2	6	61.2
%		22	17	17	11	33	

Table 8 Feature Div. 2, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Secondary		1	3	1	3	3	44
Tertiary		1	1	5	1	6	56
%		8	16	24	16	36	

Feature Division 3

We found 268 flint artifacts, of which all but one came from layer 1. The assemblage comprises 39 (14.5%) scrapers, 43 (16%) utilized flakes, 143 (53%) waste flakes, two (1%) cores of types A2 and B3, 38 (14%) pieces of irregular workshop waste, one hammerstone (0.5%), one piercer (0.5%), and one core rejuvenation flake (0.5%).

The implements are remarkable on two accounts: the limited range of types found, and the quantity and size of the scrapers. The lack of variety may suggest that the flints which were thrown in the pit once performed a specialized function.

IMPLEMENTS (31.3% OF TOTAL)

Scrapers (39)

Class A (i) (long-end)	2
Class A (ii) (short-end)	26
Class C (disc)	1
Class E (on broken flakes)	9
Calcined, unclassifiable	1

Tables 9 to 13 show the scrapers' length, breadth, thickness, weight, and angle of working-edge retouch.

Table 9 Feature Div. 3, scraper length (mm), not including broken examples

	20-30	30-40	40-50	50-60	Total	%
Secondary	1	3	7	2	13	46
Tertiary	1	8	3	3	15	54
%	7	39	36	18		

Table 10 Feature Div. 3, scraper breadth (mm), not including broken examples

	30-40	40-50	50-60
Secondary	9	3	1
Tertiary	9	6	
%	64	32	4

Table 11 Feature Div. 3, scraper thickness (mm), not including broken examples

	7-9	9-11	11-13	13-15	15-17	17-19	19-21	21-23
Secondary	1	1	3	4		3		1
Tertiary	2	3	5	1	1	3		
%	11	14	28	18	4	21		4

Table 12 Feature Div. 3, scraper weight (g)

	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	Total
No.	5	21	8	3	1			1	39
%	12.8	53.8	20.6	7.8	2.5			2.5	
Total weight: 791.2 g Average weight: 20.3 g									

Table 13 Feature Div. 3, angle of scraper working-edge retouch (to nearest 5°)

	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	Total
No.	1	4	5	8	5	6	5	3	1	1	39
%	2.5	10.2	12.8	21.0	12.8	15.3	12.8	7.6	2.5	2.5	

Utilized flakes (113)

The 43 utilized flakes weigh 432.8 g, giving an average weight per flake (broken and unbroken) of 10.06 g. Dimensions of the utilized unbroken flakes are given in Table 14. Although the numbers involved are small, they do provide a useful comparison with the waste flake dimensions of Table 15.

Table 14 Feature Div. 3, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Secondary		3	5	4	4	2	58
Tertiary		1	4	3	1	4	42
%		13	29	23	16	19	

BY-PRODUCTS (68.7% OF TOTAL)

The presence of two cores, a core rejuvenation flake, and a battered hammerstone of flint is direct evidence for flint-working. The collections of irregular workshop waste and waste flakes are unusual, however, in that primary flakes are rare. This might perhaps imply that initial core preparation and selection took place elsewhere, since choosing source material from rolled gravel flint must involve the removal of a few test flakes first.

The high weight figures for utilized flakes and for scrapers, together with the unusually clear distinction between the contents of layers 1/2 and 3, singled out Y4 for special attention. It was decided that a microscopic analysis of flint tool working-edge damage might explain why Y4 was so unlike other pits at Fengate. Barbara Voytek's study is the result (Appendix 9). This work took several months to complete. As only 268 pieces were involved in this particular study, it would be clearly impractical to treat the whole settlement's flints in this fashion. Accordingly, the flints from Y4 were also examined in the conventional way, using a $\times 10$ hand-lens, before they were sent to Harvard for Voytek's study. The data from the conventional analysis are presented below and were arrived at completely independently. It is most interesting, then, to note that both studies agree precisely on the numbers of flints used and unused (the difference of one is caused by Voytek's including the hammerstone, for the purposes of her study, with the non-utilized flints).

Waste flakes (143)

Of the 143 waste flakes, 48 are broken, of which 29.2% are calcined, 27.1% are secondary, and 43.7% are tertiary. The total weight of all waste flakes is 537.5 g, giving an average of 3.78 g per flake. This figure is in marked contrast to that noted above for utilized flakes and bears out the observation

made in the field that, in the case of Y4, the larger flakes were selected for use.

Table 15 Feature Div. 3, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Calcined		2	2		1	1	6.2
Primary			1		1	3	5.2
Secondary		3	11	8	10	14	50.2
Tertiary		5	6	13	7	8	40.6
%	10	21	22	22	20	27	

Feature Division 4

The majority of the ring-ditch was excavated using conventional hand techniques, as described in Appendix 1. Flints found in this way are described below. Material collected from the small sieved “control” section will be considered immediately afterwards. The 406 flint artifacts recovered from the ring-ditch are listed in Table 16.

Artifacts indicative of general settlement activity are present — including cutting tools (serrated flake, tanged blade), a pseudo-awl on a blunted back knife (Fig. 48:7), and scrapers. Cores, irregular workshop waste, and numerous broken and complete waste flakes indicate that some flint-working was taking place in the vicinity.

IMPLEMENTS (35.7% OF TOTAL)

Scrapers (16)

Class A (i) (long-end)	2
Class A (ii) (short-end)	2
Class C (disc)	1
Class D (ii) (short-side)	4
Class E (on broken flakes)	7

Arrowhead

One transverse arrowhead of type D was found.

Utilized flakes (124)

We found 124 utilized flakes within the two layers of the ring-ditch filling. Of these 56 were broken (53.6% tertiary, 41.0% secondary, and 5.4% primary). The breadth/length ratios of the 68 unbroken flakes are given in Table 17.

Table 16 Feature Div. 4, flint artifacts (excluding sieved area)

	Scrapers	Points	Utilized flakes	Serrated flakes	Tanged blades	Piercers	Blunted tool	Waste flakes	Irregular workshop waste	Cores	%
Layer 1	8	1	93				1	145	24	5	68.2
Layer 2	8		31	1	1	1		74	12	1	31.8
%	3.9	.25	30.5	.25	.25	.25	.25	53.9	8.9	1.6	
Total weight: 1879.3 g			Average weight: 4.6 g								

Table 17 Feature Div. 4, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary		1				1	2.9
Secondary	3	4	10	6	2	3	41.3
Tertiary		7	6	9	8	8	55.8
%	4.4	17.6	23.5	22.1	14.7	17.6	

BY-PRODUCTS (64.3% OF TOTAL)**Cores (6)**

Class A2 (one platform, flakes removed part of the way round)	3
Class B1 (two parallel platforms)	1
Class B3 (two platforms at right angles)	1
Class D (keeled, flakes struck from two directions)	1

Table 18 Feature Div. 4, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary		3	2	4	3	2	11.9
Secondary	1	3	7	10	7	15	36.7
Tertiary		9	14	13	8	16	51.4
%	0.8	12.8	19.7	23.1	15.4	28.2	

THE SIEVED "CONTROL" SECTION (TABLE 19)

By far the greatest number of flints (82%) came from layer 1, whereas layer 3 yielded only one waste flake. Tables 20 and 21 demonstrate that sieving

yielded a high proportion of flakes whose length or breadth measurements are over 10 mm. This would imply at first sight that the excavation methods employed elsewhere in the ring-ditch were not sufficiently rigorous. However, an examination of the average weight figures (Table 21) reveals that the flakes found during the sieving were in fact very tiny, being almost four times as light as those recovered by conventional means. Very thin, translucent flakes are most difficult to spot in a sand-silt matrix.

Cortex figures show a tendency towards more tertiary flakes (76.6% of all sieved waste flakes are cortical, as compared with 60.7% of all unsieved waste flakes).

The large number of small flakes found in the sieved section confirms that flint-working was carried out in the ring-ditch area. Some of this activity was probably concerned with tool sharpening or scraper-edge reworking, a hypothesis that is borne out by the discovery of a small flake with truncated retouch scars.

Table 19 Feature Div. 4, flint artifacts recovered from the sieved metre of ring-ditch filling (1/8-inch mesh)

	Utilized flakes	Waste flakes	Irregular workshop waste	Retouch flake	Total	%
Layer 1	7	51	4	1	63	82
Layer 2		12	1		13	17
Layer 3		1			1	1
Total	7	64	5	1	77	
%	9.1	83.1	6.5	1.3		

Feature Division 5

The flints found in the large pit W17 are listed in Table 22. Implements comprise 34.6% of the total collection, a proportion similar to that of the contiguous ring-ditch. The 13 cores found show that some flint-working was taking place in the immediate vicinity, but the virtual absence of finds from layers 4 and 5 (3.4% of the whole) would absolutely rule out the possibility that the pit was used as a sunken working area or "pit dwelling".

IMPLEMENTS (34.6% OF TOTAL)

Scrapers (16)

Class A (i) (long-end)	1
Class A (ii) (short-end)	6
Class D (i) (long-side)	1
Class E (on broken flake)	1
Damaged	7

Table 20 Feature Div. 4, comparison of flake lengths (mm) from sieved and unsieved areas

	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70+	Total	%
Waste flakes										
sieved	5	14	1	1					21	15
unsieved	8	46	44	15	3		1		<u>117</u>	85
									138	
Utilized flakes										
sieved		2	1	1	1				5	7
unsieved		8	23	29	8				<u>68</u>	93
									73	
Average sieved flake length: 19.0 mm Average unsieved flake length: 26.3 mm										

Table 21 Feature Div. 4, comparison of flake breadths (mm) from sieved and unsieved areas

	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50+	Total
Waste flakes												
sieved	3	8	6	4								21
unsieved		12	39	32	12	10	9	1		1	1	117
Utilized flakes												
sieved			2	3								5
unsieved		3	8	22	17	6	7	3		1	1	68
Average sieved flake breadth: 13.2 mm Average unsieved flake breadth: 20.5 mm												
Average sieved flake weight: 0.9 g Average unsieved flake weight: 3.5 g												

Table 22 Feature Div. 5, flint artifacts

	Scrapers	Points	Utilized flakes	Waste flakes	Cores	Irregular workshop waste	Piercers	Blade with flat-edge retouch	Core rejuvenation	Total	%
Layer 1	15	5	158	253	5	81	1	1		519	79.8
Layer 2		1	33	42	8	21				105	16.2
Layer 3			1	2		1				4	0.6
Layer 4	1		3	3		1				8	1.2
Layer 5			6	5		2			1	14	2.2
Total	16	6	201	305	13	106	1	1	1	650	
%	2.6	0.9	30.8	46.9	2.0	16.3	0.2	0.2	0.2		

Of the nine undamaged scrapers, two are primary, four are secondary, and three are tertiary.

Projectile points (6, grouped after Clark)

Type C2	3 (one doubtful)
Type F	1
Type H	2

Utilized flakes (152)

Table 23 gives the length/breadth ratios of the 95 unbroken utilized flakes. We found 57 broken utilized flakes of which 10.2% are primary, 36.5% are secondary, and 53.3% are tertiary; this pattern is similar to that of the unbroken utilized flakes.

Table 23 Feature Div. 5, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary		1	2	1	3		7.4
Secondary		5	10	9	5	8	39.0
Tertiary	2	8	11	8	9	13	53.6
%	2.2	14.7	24.2	18.9	17.9	22.1	

BY-PRODUCTS (65.4% OF TOTAL)

Cores (13)

Class A1 (single platform, flakes removed all round)	2
Class A2 (single platform, flakes removed part of the way round)	4
Class B1 (two parallel platforms)	1
Class B2 (two platforms at oblique angle)	2
Class B3 (two platforms at right angles)	3
Class C (three or more platforms)	1

Waste flakes (305)

The breadth/length ratios of the unbroken waste flakes are given in Table 24. We found 142 broken waste flakes of which 8.5% are primary, 29% are

Table 24 Feature Div. 5, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary		2	3	4	6	4	11.6
Secondary		3	14	8	11	25	37.4
Tertiary	2	6	10	19	14	32	51.0
%	1.3	6.7	16.6	19.0	19.0	37.4	

secondary, and 62.7% are tertiary. One striking platform core rejuvenation flake was also found.

Feature Division 6

The features of Division 6 are more widely separated spatially than are others on the site, and since it will be suggested below that they all represent the same activity, a more detailed feature by feature implement/by-product listing is given.

ARTIFACT TOTAL (443)

- Feature W29: 130 artifacts of which 22 (16.9%) are implements
- Feature W30: 9 artifacts of which 2 (22%) are implements
- Feature W31: 140 artifacts of which 23 (16.4%) are implements
- Feature W32: 73 artifacts of which 14 (19.2%) are implements
- Feature W33: 91 artifacts of which 22 (24.2%) are implements

The most important point to arise from this list is that the low figure for implements, as shown in Table 25 for the Feature Division as a whole (18.4%), also applies to each of the individual features (the only exception being the statistically insignificant W30). This would tend to justify the grouping together of the spatially separated features of this division. Division 6 was originally conceived as a single unit in the field, where the close similarities of the features' profiles, depths, and filling textures were thought to be more significant than their spatial separation.

The hammerstone, the 11 cores, and the core rejuvenation flake all suggest flint-working. When, however, we take into account the unusually high proportion of waste flakes (71.4%), together with the irregular workshop waste, it is apparent that flint-working was indeed the most important activity in or around the features of Division 6 (Fig. 31). The high proportion of broken flakes indicates that some of the knapping being undertaken did not require a great degree of control; but the figures for primary flakes, although well up to the site average, suggest that the very coarsest core preparation, if indeed such was necessary, took place elsewhere, possibly at some natural gravel outcrop.

IMPLEMENTS (18.4% OF TOTAL)

Scrapers (9)

Class A (i) (long-end)	2
Class A (ii) (short-end)	4
Class C (disc)	1
Class E (on broken flake)	1
Severely calcined	1

Arrowhead

One broken transverse arrowhead of type (?) B was found.

Utilized flakes (72)

Of the 72 utilized flakes, 34 are broken (48%). This is a higher figure than is common elsewhere on the site (cf. Feature Divisions 4 and 5). The broken utilized flakes are both secondary (38.2%) and tertiary (61.8%), figures that are generally similar to those of the unbroken utilized flakes (Table 26).

Table 25 Feature Div. 6, flint artifacts

	Scrapers	Points	Utilized flakes	Waste flakes	Cores	Irregular workshop waste	Core rejuvenation flake	Hammerstone (flint)	Total
Layer 1	9	1	72	317	11	31	1	1	443
%	2.0	0.2	16.0	71.4	3.0	7.0	0.2	0.2	

Table 26 Feature Div. 6, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary			1			1	5.4
Secondary		4	5	3	3		40.5
Tertiary		3	5	3	2	7	54.1
%		19	30	16	13	22	

BY-PRODUCTS (81.6% OF TOTAL)

Cores (11)

Class A1 (single platform, flakes removed all round)	2
Class A2 (single platform, flakes removed part of the way round)	4
Class B3 (two platforms at right angles)	3
Class C (three or more platforms)	1
Discoidal	1

One striking platform core rejuvenation flake was also found. The flint hammerstone has scars of heavy use at both ends.

Waste flakes (317)

Of the 317 waste flakes, 160 were broken. This figure (50.5%) is almost

identical to that just mentioned with regard to the utilized flakes. It is a high proportion, to judge from other Feature Divisions on the site. Of the broken waste flakes, 3.9% are primary, 24.8% are secondary, and 71.2% are tertiary. The figures for the unbroken waste flakes are given in Table 27. It would be unwise to compare the waste with the utilized flakes, in view of the small number of the latter.

Table 27 Feature Div. 6, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary		2	7	3	2	3	10.8
Secondary		6	12	7	7	9	26.2
Tertiary		4	23	26	18	27	63.0
%		8	27	23	17	25	

Feature Division 7

The features of Division 7 yielded a variety of flint types. Although there is no vertical stratigraphic evidence to show that the features of the division are contemporary, the fact that they cluster around two focal points of the site (the well and the driveway) and the similarity of their rich and exclusively Grooved Ware ceramic assemblage strongly suggest that this is indeed the case. It is therefore argued that the variety of flint types may reflect a real variety of activities in this part of the site; the principal occupations, as we shall see, would have included hunting, domestic duties, and light flint-working.

The implements indicate a wide variety of tasks, but the relatively low and similar proportion of each implement category does not point to any one activity as being dominant. Apart from hunting, as suggested by the projectile points, and leather-working, as suggested by the piercer, the other activities implied by the serrated flakes, “knives”, and scrapers can only be guessed at until adequate working-edge wear studies have been undertaken. It would, however, be reasonable to assume that domestic duties, probably connected with food preparation, were important. Other activities such as wood-working must have taken place on the site — axed twigs within the well and the ring-ditch quarry pit make this a certainty — but where, how, and with what tools remains uncertain.

The features of Division 7 provided evidence for flint-working, albeit on a less intensive scale than Feature Division 6, along with other settlement activities. The few flints recovered from the southwesterly ditches of Feature Division 1 (B2 and B43), together with the finds from the well B3, tend to support the hypothesis that large-scale rough flint-working did not take place in the southwesterly part of the settlement.

Table 28 Feature Div. 7, flint artifacts

	Scrapers	Single barb points	Transverse points	Barbed-and-tanged point	Utilized flakes	Waste flakes	Fabricator	Cores	Blades (knives) with flat-edge retouch	Irregular workshop waste	Piercer	Total
No. of artifacts	23	5	2	1	113	223	1	4	1	63	1	437
% of total	5.3	1.1	0.4	0.2	25.9	51.0	0.2	1.0	0.2	14.5	0.2	

IMPLEMENTS (33.6% OF TOTAL)

Scrapers (23)

Class A (i) (long-end)	1
Class A (ii) (short-end)	10
Class C (disc)	1
Class D (ii) (short-side)	2
Damaged	9

Two scrapers have faceted striking platforms, indicating possible core preparation.

Projectile points and arrowheads (8)

These include one barbed-and-tanged type (Fig. 45:4), one Clark type C1, one C2, and five type H. All are tertiary and exhibit careful flaking.

Other retouched tools (5)

Two serrated flakes (Table 28 includes these with utilized flakes), both with lustre along the working edge, one possible “fabricator”, one knife/blade with flat edge bifacial retouch, and one piercer complete the retouched component of this assemblage.

Utilized flakes (113)

Table 29 gives the breadth/length ratios of the 63 unbroken utilized flakes and four non-truncated flake tools. We found 46 broken utilized flakes (42% of the total utilized flakes) of which 4.3% are primary, 43.5% are secondary, and 52.2% are tertiary; these figures show a very slight tendency towards more cortical material than is shown in Table 29.

Table 29 Feature Div. 7, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary			1				1.6
Secondary	1	2	14	4	4	4	39.7
Tertiary		3	10	10	3	11	58.7
%	1.6	7.9	39.7	22.2	4.8	23.8	

BY-PRODUCTS (66.4% OF TOTAL)

Cores (4)

The four cores found could be assigned to the following classes:

Class A2 (single platform, flakes removed part of the way around)	2
Class B3 (two platforms at right angles)	1
Class E (keeled, flakes struck from both directions)	1

Irregular workshop waste (63)

The irregular workshop waste was in the main slighter than usual, consisting of smaller pieces — possible fragments of side-struck flakes, broken possible flake-bed core rejuvenation flakes, etc. — rather than the larger, irregular “bashed lumps” noted elsewhere. This pattern is reflected in the low average weight figure of 8.6 g per piece.

Waste flakes (223)

The breadth/length ratios of the unbroken flakes are given in Table 30. These flakes are more cortical than the utilized flakes, but not markedly so. The high proportion of tertiary waste flakes is partly caused by the large numbers of small (?) retouch flakes found. We found 93 (41.7% of the total waste flakes) broken waste flakes, of which 3.2% are primary, 25.8% are secondary, and 70.9% are tertiary.

Table 30 Feature Div. 7, unbroken waste flakes breadth:length ratio

	0:5–1:5	1:5–2:5	2:5–3:5	3:5–4:5	4:5–5:5	5:5+	%
Primary		2	1	2	2	4	8.5
Secondary	1	4	10	7	4	13	30.0
Tertiary	3	9	16	19	9	24	61.5
%	3.1	11.5	20.8	21.5	11.5	31.5	

Feature Division 8

The low figures for primary flakes, both utilized and waste, seem to be consistent throughout the site and indicate, as we have noted in the discussion of Feature Division 6, that we have yet to locate the area, or areas, where core selection and preparation might have taken place. The implement percentage figure (25.6%) is low compared with the other “occupation” features described above (cf. Divisions 5 and 7).

The results of the sieving experiment and the number of small waste flakes found (56% of all waste flakes weigh less than 1.0 g) indicate that flint-working was indeed practised, but was confined to finer shaping rather than to the coarser, large-scale knapping observed in Feature Division 6 (where only 43.2% of the waste flakes weigh less than 1 g).

The individual finds from each feature have been briefly mentioned in the feature description section above; the analysis that follows, therefore, does not take into account those flakes with length and breadth smaller than 10 mm.

The features of this division yielded 133 flint artifacts of which three (2%) are scrapers; other finds include one projectile point (1%), 30 utilized flakes (23%), 88 waste flakes (66%), one core (1%), and 10 pieces of irregular workshop waste (7%).

IMPLEMENTS (25.6% OF TOTAL)

Scrapers (3)

Three Class A (ii) short-end scrapers were found.

Projectile point

The point could not readily be classified, but it is considered to have aspects in common with Clark's type E.

Utilized flakes (30)

The 30 utilized flakes include 15 (50%) broken examples, of which 27% are secondary and 73% are tertiary. The breadth/length ratios of the unbroken flakes are given in Table 31.

Table 31 Feature Div. 8, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Secondary			2				13.3
Tertiary	1	1	2	1	2	6	86.7
%	7	7	26	7	13	40	

BY-PRODUCTS (74.4% OF TOTAL)

Core

The core is of type E (keeled, but with one or more platforms) and weighs 44.3 g.

Irregular workshop waste (10)

The irregular workshop waste is considerably lighter than usual (average weight: 1.6 g) and consists mainly of secondary and tertiary pieces.

Waste flakes (88)

Waste flakes form the major component of the industry. Of the total of 88 waste flakes, 43 (48.9%) are broken; 12% of the broken waste flakes are calcined, 2% are primary, 21% are secondary, and 65% are tertiary. The breadth/length ratios of the unbroken waste flakes are given in Table 32 where the cortical figures agree with those for the broken waste flakes.

Table 32 Feature Div. 8, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary					1	1	4.4
Secondary		1	1	3		5	22.4
Tertiary		2	5	8	9	7	68.8
Calcined					1	1	4.4
%		7	14	24	24	31	

Feature Division 9

We found 119 flint artifacts, comprising five scrapers (4% of the total assemblage), one projectile point of type H (1%), 36 utilized flakes (30%), 69 waste flakes (58%), one core (1%), five pieces of irregular workshop waste (4%), one flake with edge retouch (1%), and one large flake chopper/adze (1%).

The rather meagre flint assemblage is in marked contrast with the rich selection of Grooved Ware (Fig. 40:12–30 and 41:1–15) found in the features of this admittedly ill-defined division.

The flint types and the proportions in which they occur are not atypical of the settlement as a whole (Table 48). Although the waste and utilized flake collection is too small to allow detailed analysis, the comparatively small numbers of primary and secondary flakes deserve notice. Of the 200 flakes found (waste, utilized, complete, and broken) 1% are calcined, 7.5% are primary, 19% are secondary, and 72.5% are tertiary.

The variety of flint types found, together with the quantity of pottery and the evidence for the use of fire, suggest that the filling of these features derives from general domestic refuse. It would seem likely, therefore, that occupation was not solely confined to the two main settlement areas within the ring-ditch and around the driveway.

IMPLEMENTS (38% OF TOTAL)

Scrapers (5)

The scrapers have been damaged beyond safe class identification.

Utilized flakes (36)

Of the 36 utilized flakes found, 16 (44.4%) are broken; of these 12% are primary, 19% are secondary, and 69% are tertiary. The figures for the unbroken flakes are given in the breadth/length ratio lists of Table 33.

Table 33 Feature Div. 9, unbroken utilized flakes breadth:length ratio

	0:5–1:5	1:5–2:5	2:5–3:5	3:5–4:5	4:5–5:5	5:5+	%
Primary	1						5
Secondary		2	1	1	1	1	30
Tertiary		1	3	2	2	5	65
%	5	15	20	15	15	30	

BY-PRODUCTS (62% OF TOTAL)

Core

The single core found is of Class B1 (two platforms, one at an oblique angle).

Waste flakes (69)

Of the 69 waste flakes, 24 (34.8%) are broken; of these 4% are calcined, 17% secondary, and 79% tertiary. The figures for the unbroken waste flakes are given in Table 34.

Table 34 Feature Div. 9, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary		1	1	1	1	1	11
Secondary			2			3	11
Tertiary	1	6	9	4	6	9	78
%	2.0	15.5	27.0	11.0	15.5	29.0	

Feature Division 10

The filling of all the features of this division was sieved through ¼-inch mesh. Flints smaller than 10 mm × 10 mm are listed in Table 38.

IMPLEMENTS (9% OF TOTAL)

Scrapers (2)

The scrapers are both of type A (ii), short-end, and have shape indices of 0.7273 and 0.6000, well within the range noted for the settlement as a whole (see below). The working-edge retouch angles fall between 45° to 50° and 65° to 70°. The length, breadth, and thickness measurements are also consistent with other scrapers from the settlement.

Projectile point

The single projectile point found belongs to Clark's Class H (Fig. 43:11).

Utilized flakes (8)

The breadth/length ratios of the unbroken utilized flakes are given in Table 36; of the broken utilized flakes, one is secondary and two are tertiary.

Table 35 Feature Div. 10, flint artifacts, excluding those less than 10 mm × 10 mm

	Scrapers	Points	Utilized flakes	Waste flakes	Irregular workshop waste	Total
No.	2	1	8	75	37	123
%	1.6	0.8	6.5	61.0	30.1	

Table 36 Feature Div. 10, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Secondary				1			20
Tertiary		1		2		1	80
%		20		60		20	

BY-PRODUCTS (91% OF TOTAL)

Waste flakes (75)

The breadth/length ratios of the unbroken waste flakes are given in Table 37; of the broken waste flakes one (4.2%) is primary, three (12.5%) are secondary, and 20 (83.3%) are tertiary.

Table 37 Feature Div. 10, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Primary						1	2.0
Secondary			2		3	6	21.5
Tertiary		4	8	5	7	15	76.5
%		7.8	19.6	9.9	19.6	43.1	

Table 38 Feature Div. 10, flint artifacts less than 10 mm × 10 mm

	Waste flakes (complete)	Waste flakes (broken)	Irregular workshop waste
No.	11	5	20

Table 39 Feature Div. 10, flint weights (g), excluding those less than 10 mm × 10 mm

	Scrapers	Irregular workshop waste	Utilized flakes	Waste flakes	Points	Total
Total weights	56.6	52.1	59.9	80.2	3.7	252.5
Average weights	28.1	1.5	7.5	1.1	3.7	

Outlying Feature P9

A high proportion of by-products (94%) was found, comprising 11 waste flakes and four pieces of irregular workshop waste. Four of the waste flakes are broken. The total weight of the assemblage is 34.2 g.

The only implement is a piece of irregular workshop waste which has been roughly retouched along part of one side. The filling of this feature was sieved through $\frac{1}{4}$ -inch mesh and failed to reveal any flakes smaller than 10 mm $\times$ 10 mm. None of the flints is calcined.

Outlying Feature P10

The flints from this feature are surprisingly varied for such a small assemblage (Table 40). Particularly noticeable is the high proportion of serrated flakes (Fig. 45:12–15); the proportion of utilized to waste flakes is also high. Six (11.8%) flints are calcined and only one flake less than 10 mm $\times$ 10 mm was found, despite sieving through $\frac{1}{4}$ -inch mesh. The polished flint axe fragments (Fig. 49:3 and 4) show no signs of having been used or retouched after the axe was broken. Table 43 gives the weights of the flint artifacts found.

The variety of implement types found, the low by-product to implement ratio, and the almost complete absence of small waste flakes would suggest that the filling of this feature was not derived from a knapping floor. Many of the tools, particularly the serrated flakes, show signs of considerable wear and there is also a certain amount of calcination. When these factors are considered together with the charcoal and burnt stones characteristic of the filling matrix, it is reasonable to conclude that this pit contains general occupation debris.

IMPLEMENTS (43% OF TOTAL)

Scrapers (4)

Of the four scrapers found, three belong to Class A (ii), short-end, and one to D (i), long-side scraper. The shape index for the D (i) scraper is 0.400; two of the end scrapers are 0.800, one is 0.600; all are values found elsewhere on the site. The working-edge angle shows more variation, however: one at 45°, two at 55°, and one at 70°. The length, breadth, and thickness dimensions are all consistent with those noted elsewhere on the site. One Class A (ii) scraper is illustrated in Fig. 47:13.

Utilized flakes (13)

The breadth/length ratios of the unbroken utilized flakes are given in Table 41. Only two utilized flakes are broken and both are tertiary.

Polished axe fragments (4)

Two of the four axe fragments are illustrated. All four fragments weigh 138.3 g and probably come from one large axe. To judge by the severity of the blow required to remove the flake shown in Fig. 49:3, the axe was originally shattered unintentionally, the fragments later being used as

source material for making new implements. Since approximately three-fifths of the axe is missing, it might be supposed that the flint was found satisfactory for this purpose.

Other retouched tools (5)

The serrated flakes are described in detail in the description of Fig. 46. They all appear to have been utilized, however. The retouched flake, or possible fabricator, (Fig. 48:9) has its proximal end heavily ground. This grinding is almost certainly the result of use, since if the intention had been merely to strengthen a striking platform (in order to remove larger flakes), the grinding would have been much lighter; it would be impossible to detach flakes from the tool as it is now.

Table 40 Feature P10, flint artifacts

	Scrapers	Utilized flakes	Waste flakes	Serrated flakes	Irregular workshop waste	Polished axe fragments	(?) fabricator	Total
No.	4	13	19	4	6	4	1	51
%	7.8	25.5	37.2	7.8	11.8	7.8	2.1	
Calcined: 1 utilized flake, 5 irregular workshop waste (11.8% of the total assemblage).								

Table 41 Feature P10, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Secondary			1	1			18
Tertiary	1		1	5		2	82
%	9		18	55		18	

BY-PRODUCTS (57% OF TOTAL)

Waste flakes (19)

The breadth/length ratios of all unbroken waste flakes are given in Table 42. Two broken waste flakes were found; both are tertiary.

Table 42 Feature P10, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Secondary			1		1	1	17.6
Tertiary		1	4	1	2	6	82.4
%		5.9	29.4	5.9	17.6	41.2	

Table 43 Feature P10, flint weights (g), excluding flakes less than 10 mm × 10 mm and the polished axe fragment

	Serrated flakes	(?) fabricator	Scrapers	Irregular workshop waste	Utilized flakes	Waste flakes	Total
Total weights	39.8	12.1	88.5	46.8	69.3	34.4	290.9
Average weights	9.9	12.1	22.12	9.4	5.3	1.8	

Outlying Feature P59

Despite the fact that this is a small assemblage, and therefore not suitable for statistical analysis, a more than cursory description is required because of its association with a large Grooved Ware group (Fig. 42).

Although this small assemblage shows a marked preponderance of by-products, both the size of the sample and the quantities of associated, unweathered potsherds argue against the filling of P59 having been derived from a knapping floor. Rather, the high calcination figure (Table 44), the absence of tiny flakes, despite ¼-inch sieving, and the presence of much charcoal all suggest that this shallow pit contains general occupation debris.

IMPLEMENTS (19% OF TOTAL)

Scraper

The partially calcined scraper is of Class A (ii), short-end; it weighs 13.5 g (Table 47) and has a shape index of 0.444, and a working-edge retouch angle of 60° to 65°.

Utilized flakes (7)

The breadth/length ratios of unbroken utilized flakes are given in Table 45; three tertiary utilized flakes were also found.

Other retouched tools

One denticulated flake on a keeled flake was found (Fig. 46:13). It did not show signs of use.

BY-PRODUCTS (81% OF TOTAL)

Waste flakes (23)

The breadth/length ratios of the unbroken waste flakes are given in Table 46; one primary, one secondary, and five tertiary broken waste flakes were also found.

Table 44 Feature P59, flint artifacts

	Scrapers	Utilized flakes	Waste flakes	Irregular workshop waste	Denticulated flake	Total
No.	1	7	23	16	1	48
%	2.0	14.7	48.0	33.3	2.0	

Calcined: 1 scraper, 2 utilized flakes, 9 irregular workshop waste, and 7 waste flakes (39.6% of total assemblage).

Table 45 Feature P59, unbroken utilized flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Tertiary	1		1			2	100
%	25		25			50	

Table 46 Feature P59, unbroken waste flakes breadth:length ratio

	0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	%
Secondary			1	2		1	25
Tertiary			2	4	2	4	75
%			18.7	37.5	12.5	31.3	

Table 47 Feature P59, flint weights (g)

	Denticulated flakes	Scrapers	Irregular workshop waste	Utilized flakes	Waste flakes	Total
Total weights	19.0	13.5	45.2	23.6	63.8	165.1
Average weights	19.0	13.5	2.8	3.4	2.7	

The Flint Industry from Feature Divisions 1 to 9 (Tables 48–56)

IMPLEMENTS (30.6% OF TOTAL)

Scrapers (Fig. 47 and 48:1–2)

Of the 131 complete and fragmentary scrapers found, 102 could be classed according to the scheme proposed by Clark (1960).

Class A (i) (long-end)	8
Class A (ii) (short-end)	58
Class C (disc)	7
Class D (i) (long-side)	1
Class D (ii) (short-side)	7
Class E (on broken flakes)	21

Most had been made on flakes, some of which were striking platform rejuvenation flakes of type A1 cores. The great preference for short-end scrapers is consonant with later Neolithic usage elsewhere in the country.

A study of scraper shape indices (Bradley 1970:350), as related to the conventional types, reveals that type A (i) scrapers can be considered in two distinct groups centring on 0.616 and 0.323. The type C scrapers, as one would expect, give high values and form one group centring on 0.688. With one exception (0.250), the D (ii) scrapers also give high figures, the average being 0.666. Type E scrapers are also closely grouped, 0.616 being the average figure for the group (one reading of 0.417 was not included). The commonest type, A (ii), displayed a remarkable range of values, including six below 0.500 and eight above 0.800; the rest fall between these two limits and give an average figure of 0.638. This variety of values suggests that the present distinction between long- (where the length is more than 1.5 times the breadth) and short-end scrapers may be misleading, and that the apparent preference for short-end scrapers may be more the result of an arbitrary taxonomic system, than a true reflection of choice on the part of Neolithic man.

The length, breadth, and thickness figures of the Fengate scrapers are all characteristic of later Neolithic usage; compare, for example, Tables 49, 50, and 51 with Wainwright and Longworth (1971:fig. 71 and 72). The close similarity between the thickness figures is of interest in view of the contrasting source materials employed at the two sites.

Scraper retouch angles are not steep: 75.8 per cent fall within the range 45° to 70° and only 2.9 per cent are steeper than 80°. These angles are similar to those observed by Smith (1965:fig. 41) at the West Kennet Avenue, which contrasted with the more steeply retouched scrapers from Windmill Hill. Unfortunately, the 1972 Fengate excavations only produced a handful of scrapers from earlier Neolithic contexts. Intra-site comparisons are therefore impossible.

Table 48 Storey's Bar Road subsite, Area 1, flints from Feature Div. 1-9.
Excludes flakes of less than 10 mm × 10 mm and the ring-ditch sieved area finds. Serrated flakes are included with utilized flakes.

	Implements										By-products							
	Scrapers	Points	(?) fabricator	Retouched flakes	Chopper	Piercers	Utilized flakes	Hammerstones	Tanged blades	Blunted back flakes	% implements per Feature Division	Waste flakes	Irregular workshop waste	Cores	Core rejuvenation flakes	% by-products per Feature Division	Feature Division totals	% of settlement total
Feature Div. 1	14	4				2	122		1		27.0	334	51	1		73.0	529	17.3
Feature Div. 2	6	2					26	1			38.4	44	9	2	1	61.6	91	3.0
Feature Div. 3	39					1	43	1			31.3	143	38	2	1	68.7	268	8.7
Feature Div. 4	16	1		1			125		1	1	35.7	219	36	6		64.3	406	13.2
Feature Div. 5	16	6		1		1	201				34.6	305	106	13	1	65.4	650	21.2
Feature Div. 6	9	1					72	1			18.7	317	31	11	1	81.3	443	14.4
Feature Div. 7	23	8	1	1		1	113				33.6	223	63	4		66.4	437	14.2
Feature Div. 8	3	1					30				25.6	88	10	1		74.4	133	4.3
Feature Div. 9	5	1		1	1	1	36				37.0	69	5	1		63.0	119	3.7
Total	131	24	1	4	1	5	768	3	2	1		1742	349	41	4		3076	
% of total	4.3	0.8	0.03	0.12	0.03	0.7	24.9	0.1	0.06	0.03	30.6	56.6	11.3	1.3	0.1	69.4		
% of total (940) implements	14.0	2.5	0.1	0.4	0.1	0.5	81.8	0.3	0.2	0.1								
% of total (2136) by-products												81.6	16.3	1.9	0.2			

Table 49 Feature Div. 1-9, undamaged scraper lengths (mm)

	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80+	Total
No.	7	15	33	21	9	1		1	87
%	8.1	17.2	37.9	24.1	10.3	1.2		1.2	

Table 50 Feature Div. 1-9, undamaged scraper widths (mm)

	10-20	20-30	30-40	40-50	50-60	Total
No.	7	19	43	16	2	87
%	8.1	21.8	49.4	18.4	2.3	

Arrowheads and projectile points (Fig. 43, 44, and 45:1-5)

PETIT TRANCHET DERIVATIVE The variety of *petit tranchet* derivative forms found and the large size of some examples (Fig. 43:1 and 2) suggest a variety of original uses for this type. Therefore the term "arrowhead" has been dropped in favour of the less specific "projectile point". The most obvious alternative function is suggested by the large single barb, which might well have been found necessary to secure writhing fish or eels. Other lowland sites which have produced abundant projectile points with pronounced barbs include Durrington Walls and Woodhenge, both of which are located near shallow water, ideal for either spear or bow-and-arrow fishing (Clark 1948). The transverse projectile points (Fig. 44:5-12 and 45:1-3), on the other hand, give a bleeding wound and might possibly have been used to hunt smaller mammals. The taxonomic difficulties in distinguishing some of the single barbed from the transverse forms might perhaps reflect an original dual purpose.

Differences of artifact function are often reflected in their differential distribution on the ground. The following simple classification is offered, not to replace the standard scheme (Clark 1934), but rather for use when making location plans in the field.

TYPE 1 SINGLE BARB, SHARP TIP (Fig. 43) This type is defined by the presence of a single barb which varies in size from pronounced (Fig. 43:1) to minimal (Fig. 43:10). Bifacial retouch, particularly around the tip, is commonly found.

TYPE 2 SINGLE BARB, BLUNT TIP (Fig. 44:1-4) Again the single barb varies in size. Retouch is bifacial. The tip may be either blunted or, in the cases of Fig. 44:1 and 4, may carry the original striking platform and bulb of percussion used to detach the flake. This type could have been slotted into composite fish spears; it is not always easily distinguished from the transverse type described below.

TYPE 3 TRANSVERSE (Fig. 44:5-12 and 45:1-3) This type corresponds to Clark's types A to D.

Table 51 Feature Div. 1-9, undamaged scraper thicknesses (mm)

	3-5	5-7	7-9	9-11	11-13	13-15	15-17	17-19	19-21	21-23	Total
No.	7	10	17	14	15	9	6	7	1	1	87
%	8.1	11.5	19.5	16.0	17.2	10.3	6.9	8.1	1.2	1.2	

Table 52 Feature Div. 1-9, scraper working-edge retouch angles (to nearest 5°)

	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	Total
No.	1	2	6	11	14	19	20	14	10	3	3	103
%	1.0	1.9	5.8	10.7	13.6	18.5	19.4	13.6	9.7	2.9	2.9	

Table 53 Feature Div. 1–9, flint artifact weights (g).
Excludes flakes less than 10 mm × 10 mm, the ring-ditch sieved area material, and the chopper/adze.

	Total weights					Average weight of artifact types					Weight as percentage of Feature Divisions total weight					Percentage of site total		
	Scrapers	Irregular workshop waste	Cores	Utilized flakes	Waste flakes	All flint artifacts	Scrapers	Irregular workshop waste	Cores	Utilized flakes	Waste flakes	All flint artifacts	Scrapers	Irregular workshop waste	Cores		Utilized flakes	Waste flakes
Feature Div. 1	169.9	872.2	40.7	528.2	571.8	2224.6	12.2	17.1	40.7	4.4	1.7	4.2	7.6	39.3	1.8	23.7	25.7	14.5
Feature Div. 2	740.0	175.5	49.5	196.4	197.1	778.4	12.3	19.5	24.7	7.5	4.4	8.5	9.5	22.5	6.3	25.2	25.3	5.2
Feature Div. 3	791.2	561.9	110.7	432.8	537.5	2604.5	20.3	15.2	55.3	10.1	3.8	9.8	30.4	21.6	4.2	16.6	20.6	17.0
Feature Div. 4	259.2	380.8	131.6	585.0	481.0	1879.3	16.2	10.6	21.9	4.7	2.2	4.6	13.8	20.3	7.0	31.1	25.6	12.3
Feature Div. 5	155.8	1149.4	293.0	882.5	528.7	3038.8	9.7	10.8	22.5	4.4	1.7	4.7	5.1	37.8	9.6	29.0	17.4	19.8
Feature Div. 6	144.2	418.9	268.2	383.2	804.2	2091.2	16.1	13.6	24.4	5.4	2.6	4.7	6.9	20.0	12.8	18.3	38.4	13.6
Feature Div. 7	269.4	540.0	104.7	518.3	462.0	1901.8	11.8	8.6	26.2	4.7	1.8	4.3	14.1	28.4	5.5	27.2	24.3	12.4
Feature Div. 8	35.4	15.3	44.3	119.0	135.6	352.6	11.8	1.6	44.3	4.0	1.6	2.6	10.0	4.3	12.6	33.7	38.4	2.3
Feature Div. 9	42.4	56.2	9.2	240.8	93.1	452.3	8.5	11.2	9.2	6.7	1.3	4.9	9.4	12.4	2.0	53.2	20.6	2.9

Nineteen stratified, unbroken projectile points can be classified after Clark's scheme.

Type C1	1
Type C2	5
Type D	2
Type E	1
Type F	1
Type G	1
Type H	8

OTHER FORMS A proximal fragment of a thin, finely retouched leaf-shaped arrowhead was found in the Division 1 ditch W24 (Fig. 45:5). One barbed-and-tanged arrowhead was found in the Division 7 post-hole B10 (Fig. 45:4).

Utilized flakes

Flakes will be discussed in more general terms in the section devoted to waste flakes, below. An examination of the breadth/length figures for utilized and waste flakes from the individual Feature Divisions does indicate a slight, but consistent, preference for less cortical and more blade-like utilized flakes (Tables 54 and 55). This tendency is marked by a greater proportion of utilized flakes in the 2:5 to 3:5 cell and a similarly greater proportion of waste flakes in the 5:5+ cell.

Other implements

Implement types not discussed above are listed in Table 48 and all are illustrated and fully described in Fig. 45:6-11, Fig. 48:3-8, and Fig. 49:1-2. Further information may be obtained by reference to the relevant Feature Division description.

Table 54 Feature Div. 1-9, unbroken utilized flakes breadth:length ratio

		0:5-1:5	1:5-2:5	2:5-3:5	3:5-4:5	4:5-5:5	5:5+	Total
Cortical	No.	5	27	60	37	29	22	180
	%	1.2	6.5	14.5	8.9	7.0	5.3	43.5
Non-cortical	No.	3	34	54	47	33	63	234
	%	0.7	8.2	13.0	11.3	8.0	15.2	56.5
Total	No.	8	61	114	84	62	85	414
	%	1.9	14.7	27.5	20.3	15.1	20.5	

BY-PRODUCTS (69.4% OF TOTAL)

Cores

The 41 cores found can be grouped according to Clark's (1960) scheme.

Type A1 (single platform, flakes removed all round)	4
Type A2 (single platform, flakes removed part of way round)	14
Type B1 (two platforms, parallel)	3
Type B2 (two platforms, one at oblique angle)	3
Type B3 (two platforms at right angles)	9
Type C (three or more platforms)	3
Type D (keeled, flakes struck from two directions)	2
Type E (keeled, but with one or more platforms)	2
Discoidal	1

The low ratio of cores to flakes is a point of note also observed at Durrington Walls. Indeed, the two collections of cores are similarly proportioned, with emphasis given to types A (i) and (ii) — 62 per cent at Durrington and 43 per cent at Fengate. Most of the Fengate single platform cores are of the paler, rather poor quality flint, whereas the type B, D, E, and discoidal cores are principally of black/dark brown high quality flint. Both types of flint occur in the gravel subsoil of the site, but the higher quality material is scarcer. The greater number of striking platforms found on cores of the better flint might suggest that the value of the dark flint was appreciated and that greater efforts were made to use it efficiently.

Waste flakes

Flake metrical differences are as much the result of technological or functional change as of source material or stylistic variation. Flake shape and size, for example, depend upon so many variables (the quality of source material, the shape and material of the hammerstone used, the use of soft hammer or indirect percussion, the use of pressure flaking, the force and angle of striking) that it is extremely difficult to relate the variations observed to any single cause. This is the case particularly since criteria for identifying most of these variables have yet to be isolated (Speth 1972:34–39).

The dimensions of waste flakes from Feature Divisions 1 to 9 follow the trend established by Smith (1965) for later Neolithic flakes from the West Kennet Avenue. There is, however, a slight bi-modal tendency in both waste and utilized flakes (Table 56) from Fengate that was not observed at West Kennet (Smith 1965:table 38). In view of the stated problems in interpreting metrical data of this sort, no explanation of our slightly skew distribution will be attempted.

The waste flakes are in general smaller than the utilized flakes (Table 53, column 2), but there is considerable variation over the settlement as a whole. For example, utilized and waste flakes from Feature Division 3 weigh on average 10.1 g and 3.8 g respectively, whereas those from Division 1 weigh 4.4 g and 1.7 g (Table 53).

A comparison of breadth/length ratio figures of the flakes found in the earlier Neolithic house (FNG 1:fig. 9) with those from the Late Neolithic/Bronze Age features of Divisions 1 to 9 (Tables 54 to 56) shows a shift from a blade-based to a squatter, flake-based industry. Dr. Smith's observations in Wiltshire seem to hold true for Fengate, but whether for the same reasons is another question.

Table 55 Feature Div. 1–9, unbroken waste flakes breadth:length ratio

		0:5–1:5	1:5–2:5	2:5–3:5	3:5–4:5	4:5–5:5	5:5+	Total
Cortical	No.	2	43	102	70	70	126	413
	%	0.2	4.5	10.8	7.4	7.4	13.3	43.6
Non-cortical	No.	9	55	98	123	95	154	534
	%	0.9	5.8	10.3	13.0	10.0	16.3	56.4
Total	No.	11	98	200	193	165	280	947
	%	1.2	10.3	21.1	20.4	17.4	29.6	

Table 56 Feature Div. 1–9, breadth:length ratio of all flakes

		0:5–1:5	1:5–2:5	2:5–3:5	3:5–4:5	4:5–5:5	5:5+	Total
Cortical	No.	7	70	162	107	99	148	593
	%	0.5	5.1	11.9	7.9	7.3	10.9	43.6
Non-cortical	No.	12	89	152	170	128	217	768
	%	0.9	6.5	11.2	12.5	9.4	15.9	56.4
Total	No.	19	159	314	277	227	365	1361
	%	1.4	11.7	23.1	20.3	16.7	26.8	

Irregular workshop waste

Irregular workshop waste comprises a large proportion (11.3%) of the total flint assemblage. The relative proportions of irregular workshop waste to other by-products have been described in the analysis of the individual divisions. Discussion, however, is impeded by the obvious lack of quantifiable attributes. The terms primary, secondary, and tertiary, although useful when describing the small earlier Neolithic assemblage, are nevertheless not to be wholly trusted; nor can consistent length, breadth, and thickness measurements be obtained. There remains but one readily distinguishable attribute, namely, weight. Flint weight, however, is notoriously misleading when used for any but the most straightforward observations.

An examination of the pieces of irregular workshop waste from Divisions 1 to 9 suggests that on average they weigh more than utilized flakes, the only exception being Feature Division 8, where the sample size is not significant (Table 53, column 2). Most pieces weigh on average slightly more than 11 g, whereas the average figure for the earlier Neolithic assemblage (7.1 g) is somewhat less. There is considerable variation over the settlement as a whole and, perhaps surprisingly, there does not appear to be any correlation between the average weight of flakes and of irregular workshop waste. This might imply, as was suggested in the description of the earlier Neolithic flint-work above, that waste flakes and irregular workshop waste were produced as the result of quite separate processes.

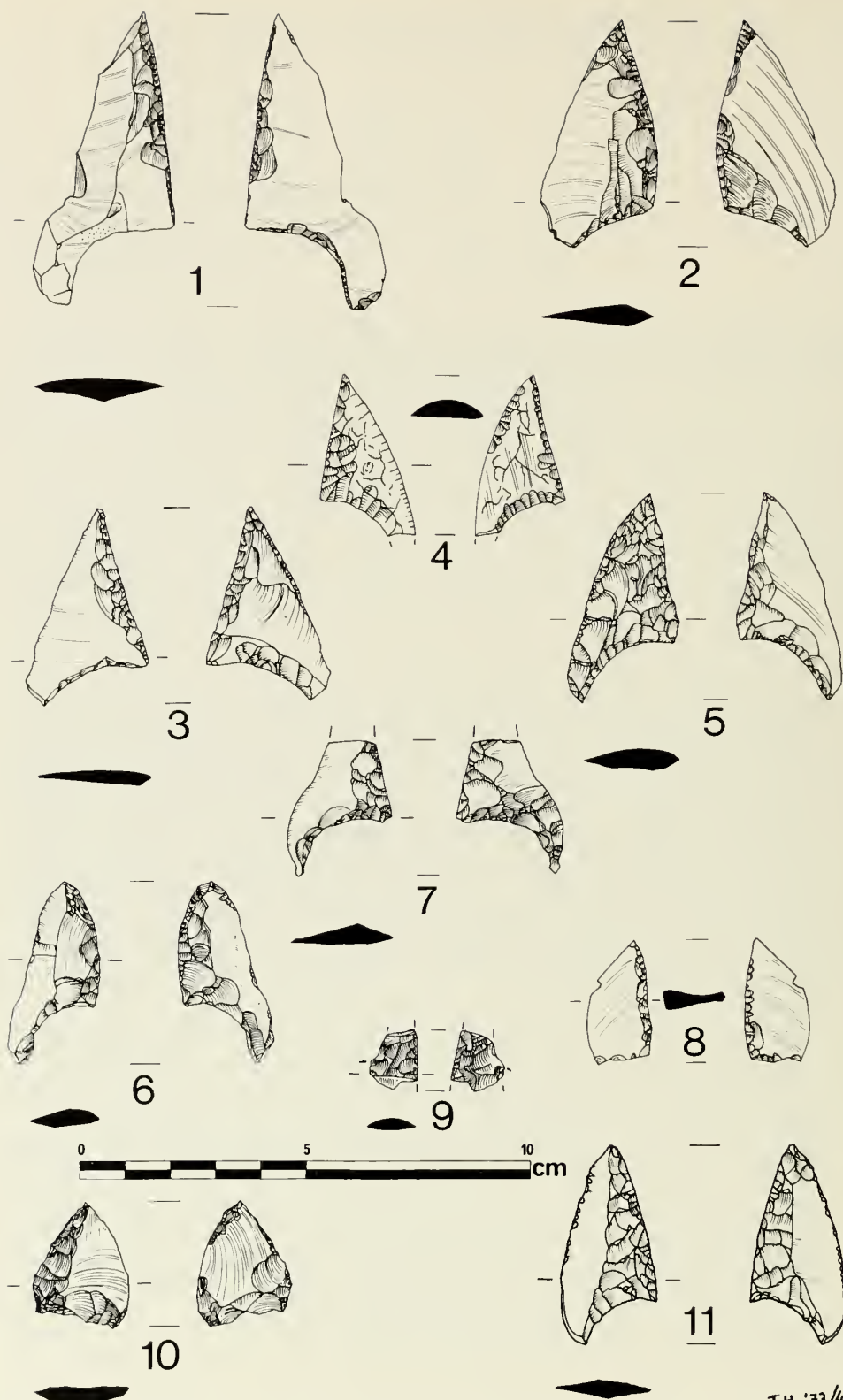


Fig. 43 Storey's Bar Road subsite, Area I, flint implements: projectile points, single barb and pointed tip. J.H. '73/4.

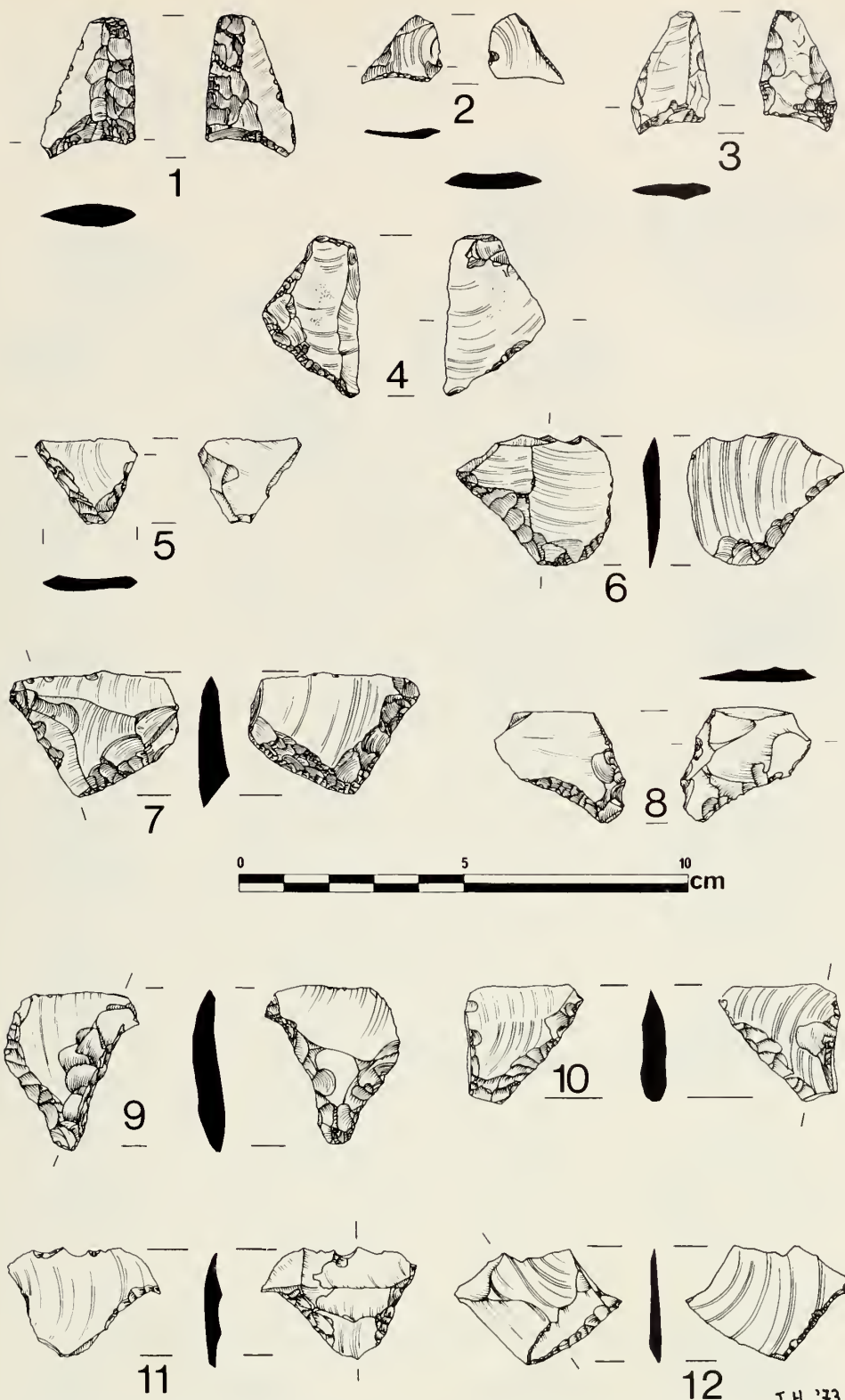


Fig. 44 Storey's Bar Road subsite, Area I, flint implements: projectile points, single barb and blunt tip (no. 1-4); projectile points, transverse type (no. 5-12).

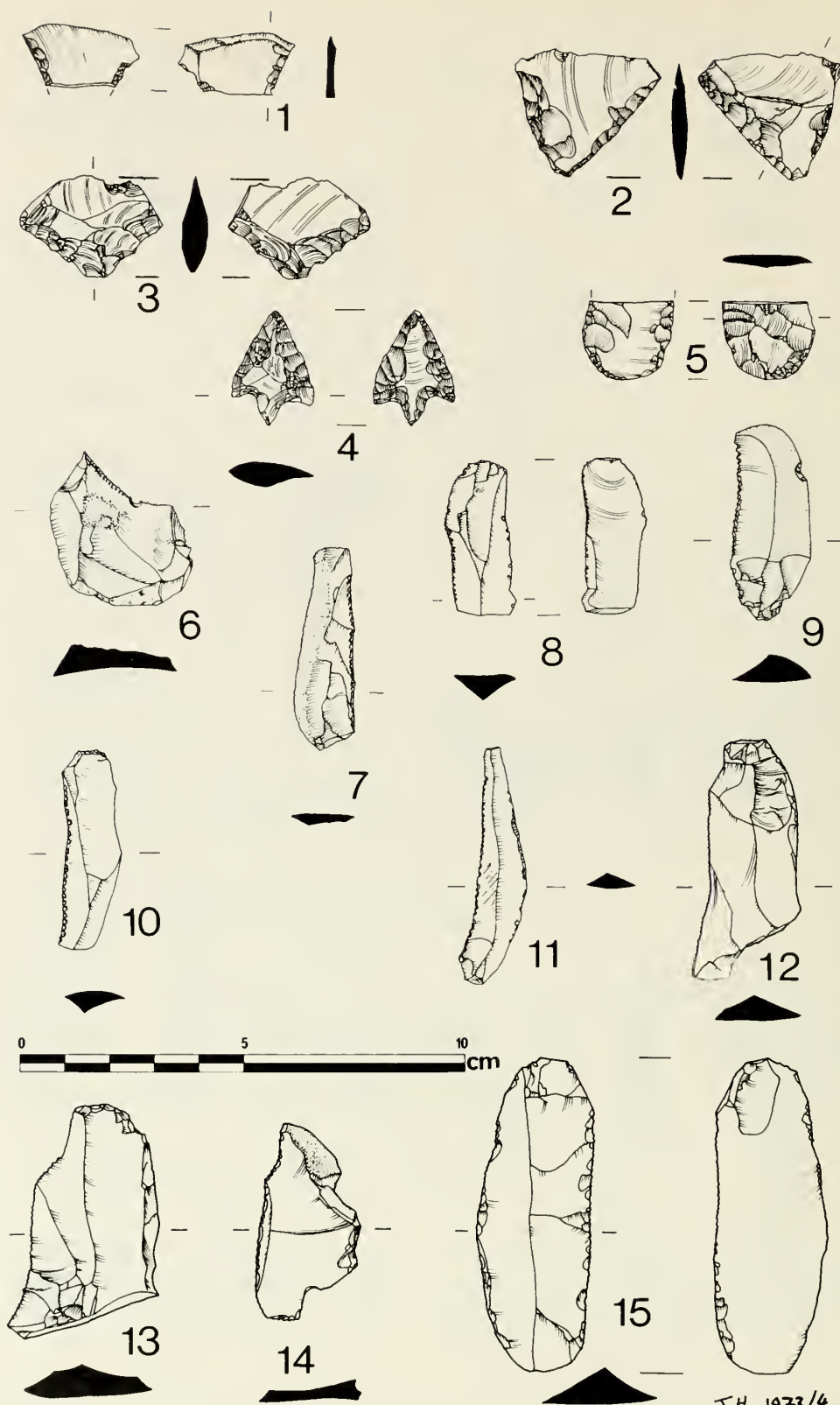


Fig. 45 Storey's Bar Road sub-site, Area I, flint implements: projectile points, transverse type (no. 1-3); barbed-and-tanged arrowhead (no. 4); leaf-shaped arrowhead (no. 5); serrated flakes (no. 6-15).

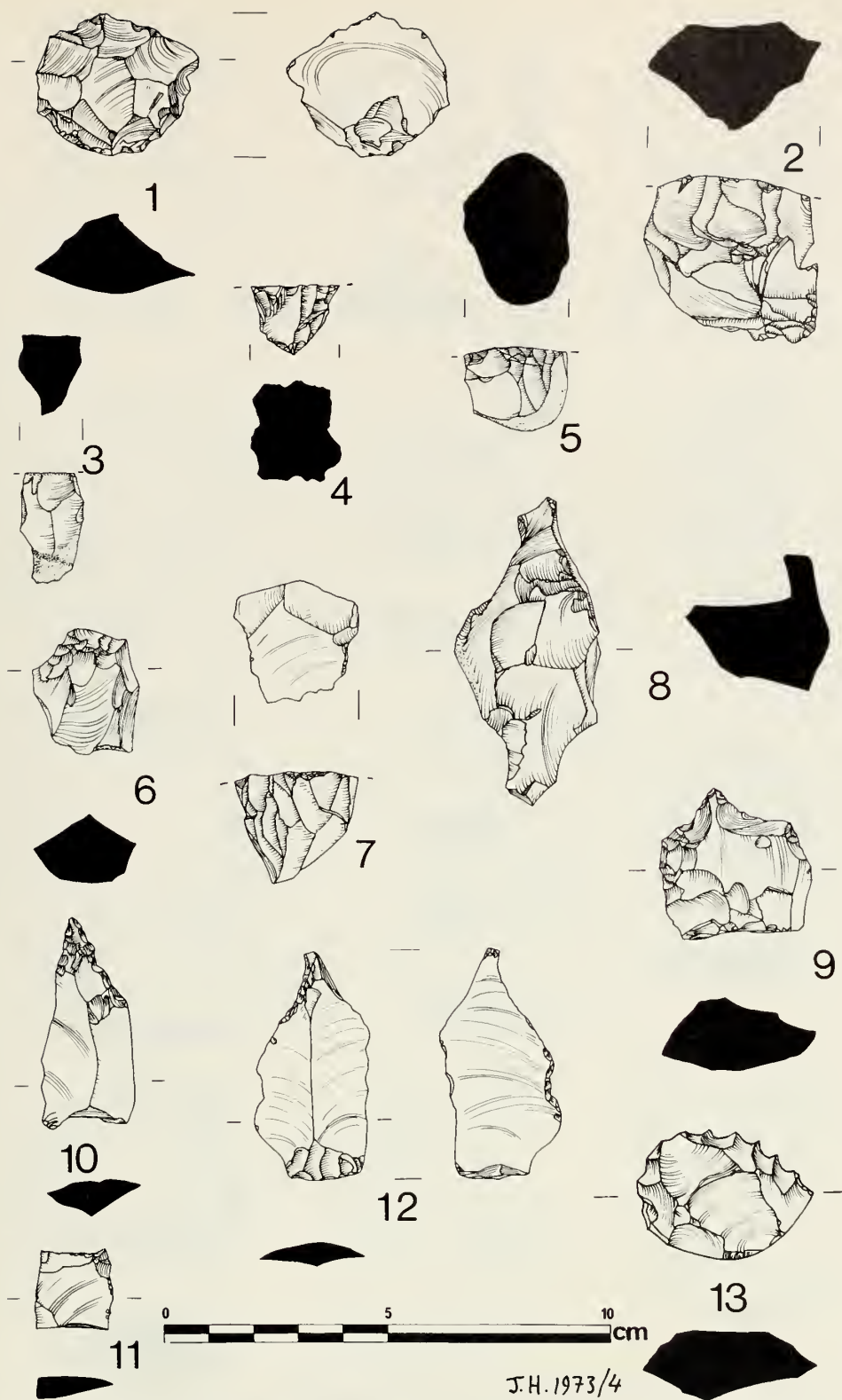
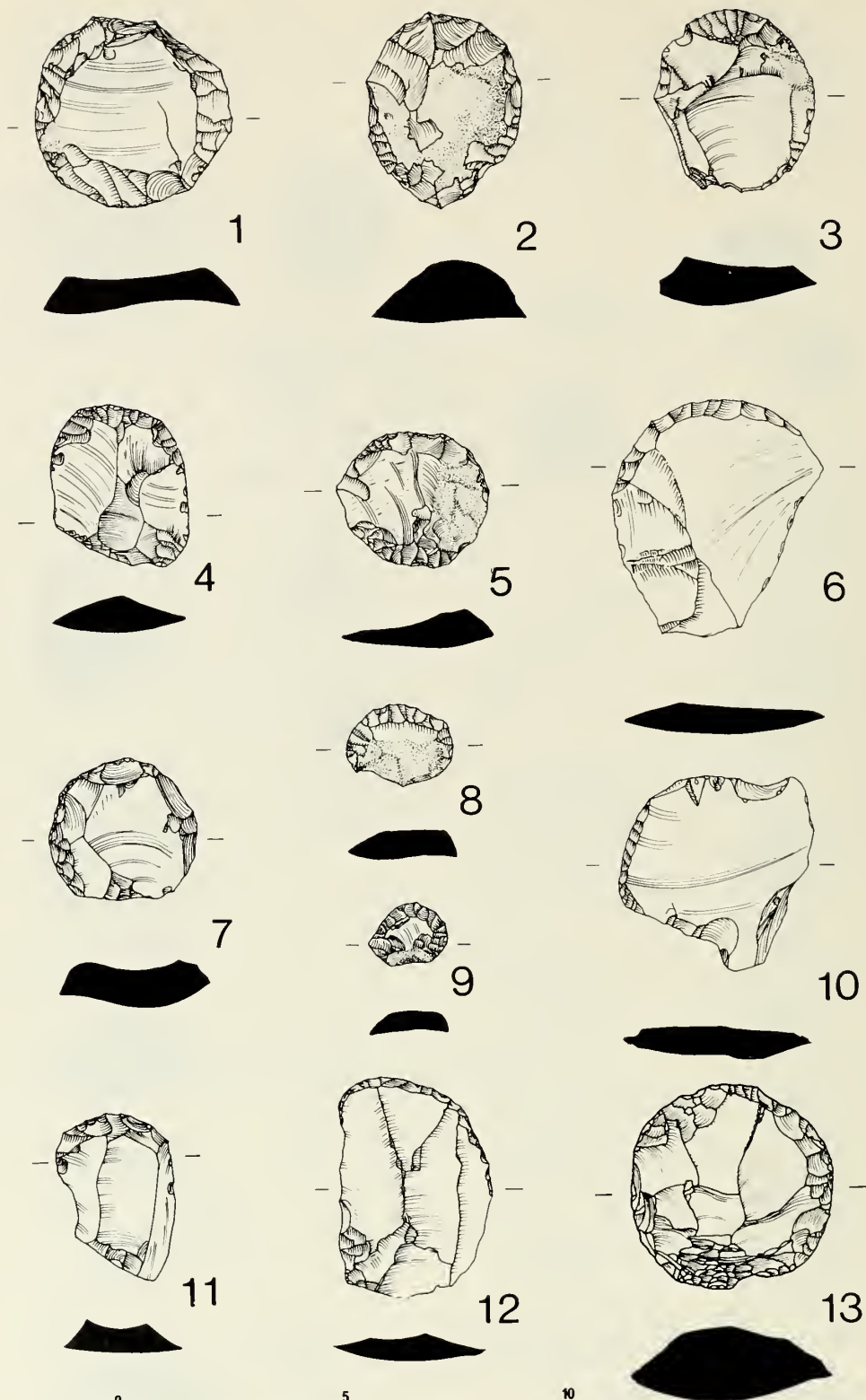


Fig. 46 Storey's Bar Road subsite, Area I, flint implements: cores (no. 1-8); piercers (no. 9-12); denticulated flake (no. 13).



JH. 1973/4

Fig. 47 Storey's Bar Road subsite, Area I, flint implements: scrapers.

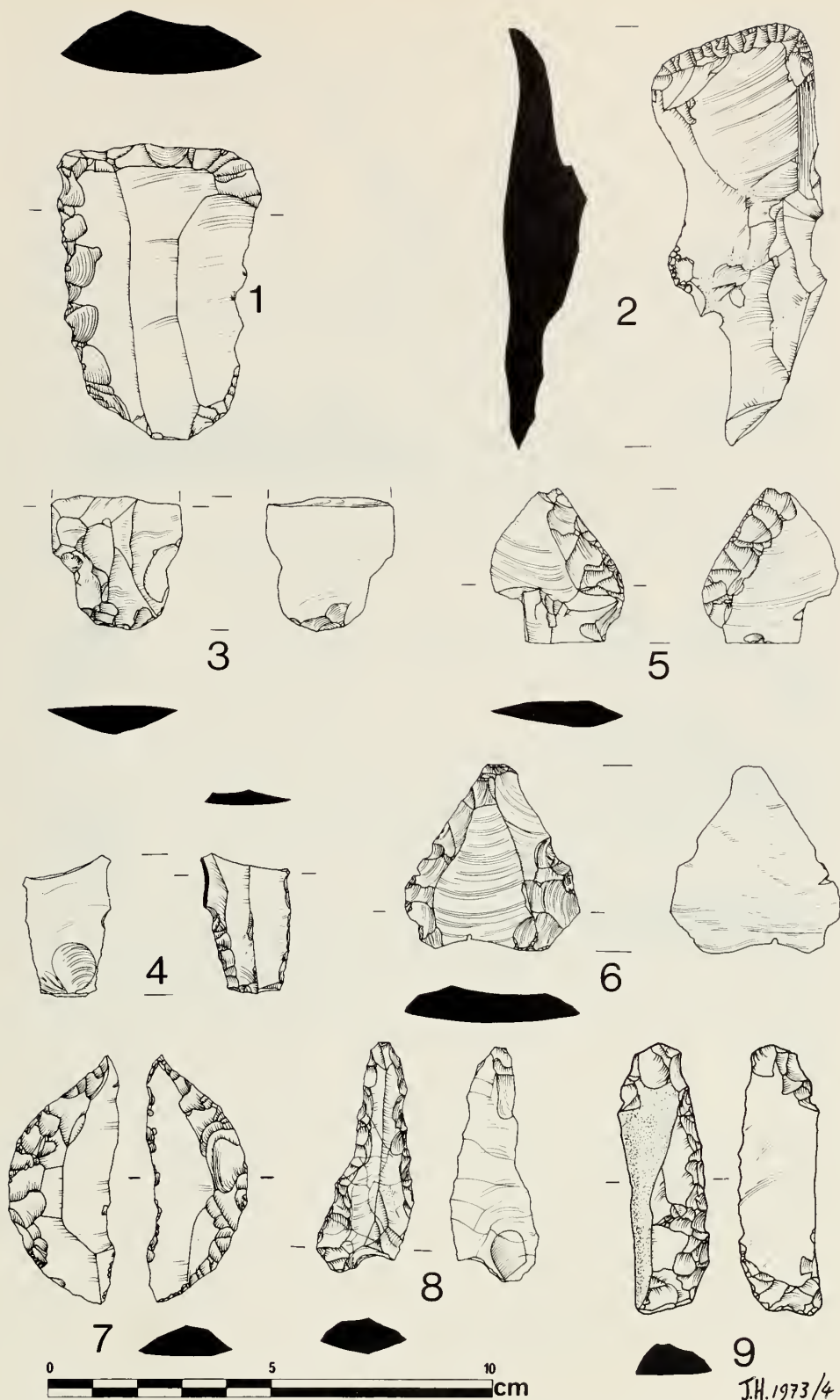


Fig. 48 Storey's Bar Road subsite, Area I, flint implements: scrapers (no. 1-2); tanged blades (no. 3-4); flakes with flat edge retouch (no. 5-6); flake with blunted back (no. 7); steeply retouched flakes or fabricators (no. 8-9).

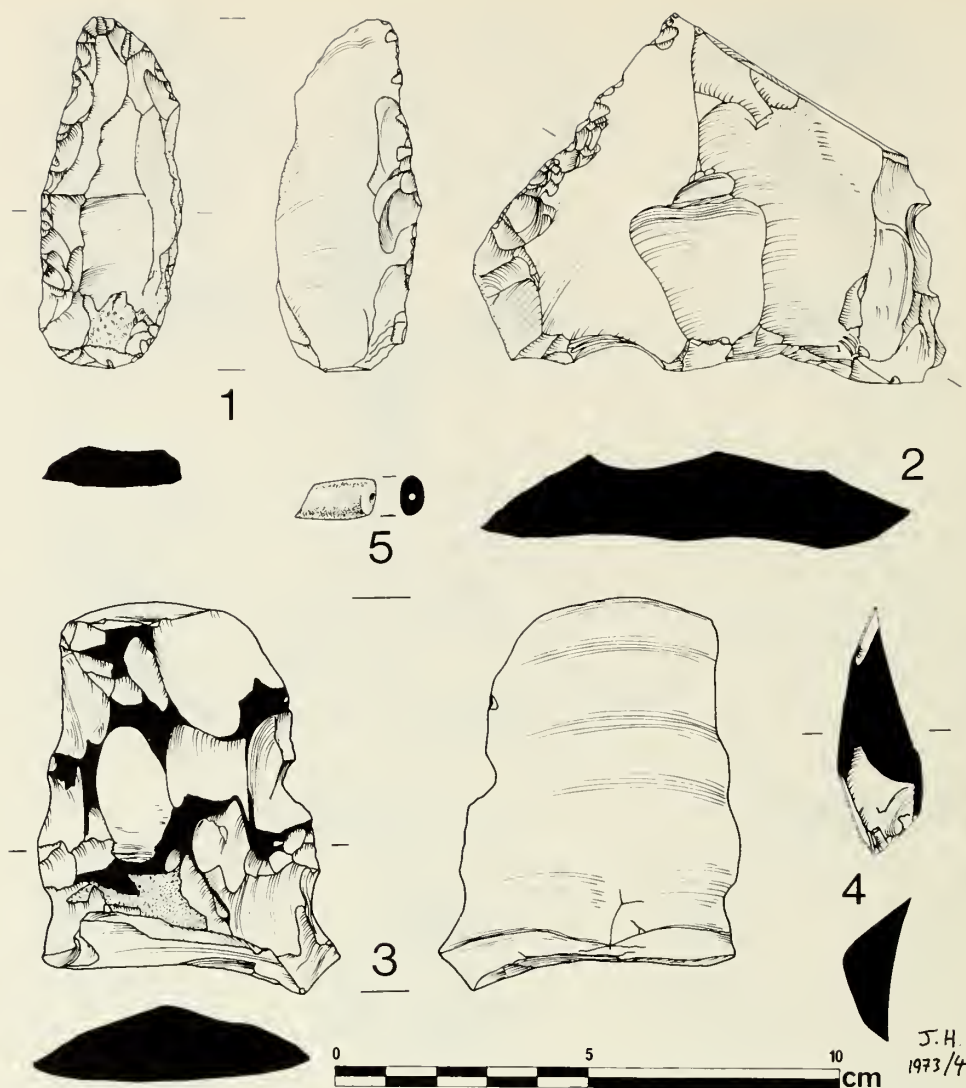


Fig. 49 Storey's Bar Road subsite, Area I, chipped flint, polished flint, and jet: utilized flake with bifacial retouch (no. 1); chopper/adze on flake (no. 2); polished axe fragments (no. 3-4); jet bead fragment (for description of this fragment see Chapter 5) (no. 5).

Chapter 5

Miscellaneous Finds

Burnt Clay

Burnt clay "daub" was found in feature P59 only (finds no.: 74:1384, 74:1387, 74:1389, 74:1453, 74:1469, 74:1471, 74:1481, 74:1486, 74:1487, 74:1559, and 74:1566). No wattle impressions are present. The clay itself is of very uneven quality with quantities of sand, grit, and small gravel pebbles. There are no signs of lamination to suggest that the inclusions were kneaded into clay as a temper; the impression given is that impure local clays were accidentally fired. Twenty-eight pieces were found, weighing a total of 120.7 g. Nearly all the pieces are reddish in colour, but unevenly fired or baked; 10YR 5/6 (yellowish red) is fairly typical. All pieces appear to have been fired in open, oxidizing conditions, since dark or black fragments are absent; flame scorching is also absent. The burnt clay discussed here was found in layer 1 of feature P59.

Polished and Abraded Stone

Polished Stone Axe Fragment

A weathered flake from a polished stone axe (finds no. 73:2665) was found in layer 1 of the ring-ditch at Grid 58/95, depth 0.02 m. A thin section of this flake was examined by Dr. W. A. Cummins who reports in a personal communication dated October 31, 1974, that the rock "is a gabbro, but does not seem at the moment to fit into any petrological group, published or unpublished. It differs from the Cornish epidiorites/greenstones in the fresh character of the large augite crystals and in its ophitic texture. It is too coarse to be assigned to Group XVIII . . . and also lacks the usual quartz of that group." Dr. Cummins suggests, very tentatively, that the source might be somewhere in Wales.

Miscellaneous Worked Stone Fragments

- 73:2500 One fragment of a limestone "rubber", the source of which is not to be found in the immediate area, was discovered in the ring-ditch layer 1, Grid 47/83, D. 0.03 m. One surface is smoothed and marked by an open U-shaped shallow groove, W. 8 mm, D. 5 mm. It is unlikely to be an "arrow-straightener", as the groove is too shallow and ill-defined.
- 73:2435 Another fragment of the same limestone was also found in the ring-ditch, but in layer 2, Grid 53/93, D. 0.25 m. One face is ground flat, but not as smooth as 73:2500.

- 74:49 Fragment of ground limestone from feature P1 (Division 10) layer 1, Grid 35/130.

Jet

- 73:1439 A fragment of an axially-perforated cylindrical bead damaged at one end (Fig. 49:5). Weight 0.5 g; Dia., ext. 8 mm; Dia. of perforation 1.5 mm. In transverse section it is very slightly oval. W17 layer 1, (Grid 66/91) D. 0.15 m.
- 73:2109 A small jet fragment 3 mm thick; one polished surface. Possibly part of a collared bead (cf. FNG 1:fig. 23) or of a large spacer bead. W24 (Grid 53/105).

Worked Wood

- 73:2273 Several pieces of axed wood were found in layer 5 of the large pit W17. Five of the six pieces are illustrated (Pl. 11) and have been identified as oak (Appendix 5).
- 73:2272 The same layer also produced a large alder log, (Fig. 27 and Pl. 12). The bark was completely removed; there were superficial axe cuts on the exterior and a deep V-shaped notch cut into the side. The log was found leaning at an angle of about 85° towards east-northeast, with its base on the bottom of the pit. The base bore clear axe-marks (Pl. 13). The top protruded above the permanent water table to the layer 5/2 interface where it had completely rotted away. No estimate of its original length can therefore be offered. The axe-marks on the bottom must represent secondary dressing, since otherwise it must be assumed that the tree, or limb, was felled by blows delivered at right angles; experiments have shown that this technique is improbable (Coles 1973:pl. 3).

The length of the log was 94.25 cm; diameter (at bottom) 16.0 cm; diameter (at top) 14.0 cm; depth of notch 7.5 cm; length of notch 17.0 cm.

The stepped shape of the notch and the position in which it was found argue strongly that the log was part of a notched ladder with a carefully flattened base. There are numerous ethnographic parallels for similar ladders.

Urethane casts were made of the axe-marks and the notch and sample sections of the log have been freeze-dried.

Worked Bone

- 74:1557 The outlying feature P59, layer 1, produced a small piece of calcined bone roughly fashioned into a short, wide point or piercer. The tip shows slight polish and there are longitudinal scratch-marks, probably the result of wear. It was found at Grid 108/201, D. 0.15 m.

Chapter 6

Intra-Community Settlement and Subsistence Patterns

Activity Areas

The following account is in part based on the detailed division by division analysis of the flint industry in Chapter 4. It should also be noted that the activity area breakdown is based on an analysis of material found in the *filling* of various features. It is not always suggested that the features themselves were used for the purposes assigned them, although it is probable that these activities took place in their vicinity.

Family or General Domestic

These features fall into three broad groups on the basis of their distribution: those of the ring-ditch area (Feature Divisions 4, 5, and 8), those around the droveway and well (Feature Divisions 2 and 7), and those distributed more widely over the site (Feature Divisions 1 and 9).

Family or domestic refuse is characterized by the wide spectrum of material recovered. The almost universal presence of arrowheads and projectile points argues for the presence of men, whereas the large quantities of pottery and flint implements could be taken to imply the presence of women. Many faunal bones show signs of partial calcination, as do a proportion of the flints. This might suggest that these items lay around the occupation area where they were accidentally burnt. The natural subsoil was only rarely burnt, implying that much of the cooking was carried out on the surface which has since been lost. It is extremely difficult to arrive at working estimates of the relative proportions of the different artifacts and bones found in features of this category, but very tentatively it is suggested that potsherds and bones occurred in more or less equal numbers and that one potsherd was recovered for every one or two dozen flints found.

A much clearer picture emerges for flint-work. Implements comprise on average 32.7 per cent of the total found in these general or family domestic assemblages (Divisions 1 to 2, 4 to 5, and 7 to 9) and by-products account for 67.3 per cent. For comparison, the almost certain family occupation assemblage of the earlier Neolithic house is composed of 53.8 per cent by-products and 46.2 per cent implements. This would indicate either that more flint-knapping took place in the Late Neolithic settlement areas, or that they were occupied for a longer period of time. The latter is a factor that might well bias the figures in favour of by-products, since these would tend

to accumulate faster than spent implements. The range of implement to by-product ratios for individual Feature Divisions may be seen in Table 48. It is clear that flint-working, which must have included implement sharpening and the like, was an integral part of daily life and was frequently carried out in the family occupation areas.

Food Preparation

The material found in the filling of the pit Y4 (Feature Division 3) was, on the whole, similar to that found in the family occupation features. It differed in certain significant respects, however. The pit itself was deliberately filled-in very shortly after being dug; the filling consisted of two distinct layers, probably deposited within a short time of each other. The lowest layer (3) was composed of clean gravel, identical to that forming the natural subsoil near the bottom of the pit (Fig. 20); mixed with it was a quantity of animal bones including cattle, sheep, pig, and deer (Table 61) some of which bore clear butchering scars. The surface of this layer had been rammed hard, and over it was spread a thick deposit of debris-filled earth, including much charcoal, a few Grooved Ware sherds, and many flints (layers 1 and 2).

The ratio of implements to by-products is entirely consistent with that found in the family occupation features (Table 48). The utilized flakes, however, were noticeably larger and heavier than any others found in the settlement. It is suggested that this size difference is significant. The chi-squared statistic was used to test the Null Hypothesis that there is no significant difference between the average weights of utilized flakes from each of the family occupation feature groups and those from the pit Y4. Substituting the average weights given in Table 48, we used the formula:

$$\begin{aligned}
 \chi^2 &= \sum \frac{(o - e)^2}{e} \\
 \chi^2 &= \frac{(10.1 - 4.4)^2}{10.1} + \frac{(10.1 - 7.5)^2}{10.1} + \frac{(10.1 - 4.7)^2}{10.1} + \frac{(10.1 - 4.4)^2}{10.1} \\
 &\quad + \frac{(10.1 - 4.7)^2}{10.1} + \frac{(10.1 - 4.0)^2}{10.1} + \frac{(10.1 - 6.7)^2}{10.1} \\
 \chi^2 &= 17.71 \qquad 6 \text{ d.f.} \qquad p = < .01
 \end{aligned}$$

There is, therefore, a greater than 99 per cent probability that the Null Hypothesis is incorrect.

The proportion of scrapers was far higher than elsewhere in the settlement and they were also noticeably heavier (Tables 48 and 53). Many of the flints had been extensively calcined, and the quantities of charcoal found in the upper layers suggest that the sweepings from cooking hearths had been emptied into the pit, probably to stifle the smell of decaying bones. None of the layer 3 bones, however, showed signs of having been burnt, so it is unlikely that they had been allowed to lie around the living areas for any length of time.

In her analysis of the microscopic working-edge damage of the flints (Appendix 9), Barbara Voytek draws attention to the fact that the size of many tools, particularly scrapers, may be a reflection of the extent to which they were used. If such is indeed the case, it would appear that the scrapers and utilized flakes from Y4 might have been discarded before they had been used to the full. Voytek concludes that, in general, blades were used for cutting while thicker, squatter flakes were used for scraping. There is nothing in the microwear report that fails to support the hypothesis that the pit's filling represents the remains of a meal and possibly the associated cooking debris.

The quantity and variety of faunal bones found (Table 60) do not suggest that we are here faced with the remains of one nuclear family's meal. It could be supposed that the bones accumulated over several days, or even weeks, but if this did indeed happen, it is unusual that we did not find small slips of topsoil in the clean gravel matrix surrounding the bones, for the extreme steepness of one wall would have inevitably resulted in a major collapse after even light rain (a situation encountered several times during the actual excavation). All the evidence points to the fact that the pit, or at least its lower portion, was deliberately dug to receive the bones, shortly after the meat on them had been eaten. If this was so, we have here evidence for more than one nuclear family's daily consumption, and should, perhaps, think in terms of some larger kinship group.

Finally, there is nothing about the location of the pit to imply that it contained the remains of a "ritual" feast. Its slight distance from the other features of the southern occupation area may have been on account of odours rather than a reflection of sanctity.

Flint-working

It is suggested that the features of Division 6 were associated with flint-working. Four of the five shallow pits were located within the northwest enclosure of Phase 2 and the fifth was located near the north corner of the 1973 excavations (Fig. 6). This distribution in the neighbourhood of, but away from, the ring-ditch settlement area was probably intentional, since sharp flint waste would pose an obvious hazard to people going about their daily tasks. The five features are strongly linked on morphological grounds and their contents are characterized by a scarcity of occupation debris: little charcoal, no bone and very few or only fragmentary potsherds (of Grooved Ware). This contrasts with the very dense concentration of flints.

The flint assemblage is characterized by a high proportion of by-products (Table 48). We have seen that features of the general or family occupation type show a ratio of 32.7 per cent implements to 67.3 per cent by-products, whereas the 443 flint artifacts from the features of Division 6 are composed of 18.4 per cent implements and 81.6 per cent by-products. The chi-squared statistic is again used to test the Null Hypothesis that there is no significant difference between the by-product/implement ratio of the family occupation features and the suggested flint-working features of Division 6.

$$\chi^2 = \sum \frac{(o - e)^2}{e}$$

$$\chi^2 = \frac{(18.7 - 32.7)^2}{32.7} + \frac{(81.3 - 67.3)^2}{67.3}$$

$$\chi^2 = 8.90 \quad \text{d.f.} = 1 \quad p = < .01$$

The chances are greater than 99 in 100 that the Null Hypothesis does not apply. It may be confidently stated, therefore, that the higher proportion of by-products to implements is significant.

The features of Division 10 show an even higher proportion of by-products to implements (91% to 9%). The total number of flint artifacts involved is too small, however, to allow much significance to be attached to these figures.

Gravel-digging

It should be stated at the outset that there is no direct evidence that the large pit W17 was ever in use in Late Neolithic times. What evidence there is is given above (p. 62). This lack of direct evidence would be the logical result, however, if W17 was in fact dug and enlarged as a gravel-quarry in the manner discussed below.

The explanation for the gravel-digging offered here is based in part on practical experience during the excavations. Each season we were faced with the problems caused by mud around the campsite. Various means were tried to solve the problem, but gravel, laid down in layers 10 centimetres to 15 centimetres thick, proved to be the most effective. Not all local gravel was suitable, however, we soon learned that the gravels in the top half metre, or so, of the C horizon usually had a high silty-clay content which caused them to puddle under foot and to hold, rather than to drain away, rain-water. These gravels could also be stiff and at times hard to dig. Below 50 cm, however, the gravels were loose, free from binding agents, and more evenly graded. This was particularly true of those gravels below the water table which were extremely loose, were in effect washed, and were of course very easy to dig. That this was so in ancient times is illustrated by the necessity of lining wells with closely woven wattlework.

At least six prehistoric wells have so far been met with at Fengate and they are all of the same type: wattle-lined, steep-sided, and circular — perhaps 2 to 3 metres in original diameter (compare, for example, feature B3; also FNG 1:fig. 18 and 19 and pl. 6 and 7). The filling of W17 shows no trace of dwelling or working floors, and so its use as a pit-dwelling, albeit a wet one, may be discounted. It is clearly far too large and wet to be a storage pit. Perhaps its location as part of a ring-ditch might imply some ritual function, but suitable parallels elsewhere in Britain are very hard to find.

Arguments in favour of the gravel pit hypothesis include its size, and, as we have seen, its depth. If the notched log ladder from layer 5 did in fact originally belong in the pit W17, as its attitude suggests, and was not dumped in subsequently, then the pit was probably in regular use. House floors, paths, and gateways require constant attention in winter, and easy access to clean gravel would have been necessary. It is not hard to imagine that the settlement nearby, confined as it was by a substantial ring-ditch, would have swiftly become very muddy in wet weather.

The earliest dated *in situ* artifact, in this instance the stake found protruding from the bottom, probably represents the last period when the pit was in use. HAR-406 (1340 ± 80 bc) therefore provides, if this hypothesis is accepted, a *terminus ante quem* for the feature.

The gravel-digging hypothesis would not, of course, discount subsequent use as a watering-hole perhaps, during Phases 3 and 4. It is probable that the dated wooden stake was connected in some way with such secondary use.

The Economy

The spatial distribution of features again prompts several observations. The rectilinear enclosures defined by the ditches of Division 1 were characterized by gaps, or entranceways, at every corner. Two gaps had been blocked in antiquity (that between the northwest-southeast and northeast-southwest lengths of ditch B21, Fig. 12, and that between the original, substantial length of W24 and the ring-ditch, Fig. 6). One had been modified, by a short, angled extension, clearly intended to divert traffic from the southeast enclosure to the open ground to the northeast, or *vice versa* (Fig. 13:ditch R21). These are three examples of land management, perhaps made necessary, as we shall see below, by the need to conserve grazing.

It has been noted that the two ditches of the droveway were laid out as an integral part of the Phase 1 enclosure system. It is, as any farmer knows, extremely difficult to drive cattle through a gap in the long side of a field, since animals tend to bunch and wander in front of the gate. One solution to the problem is to construct "antennae" ditches, such as those at Little Woodbury. Alternatively, it is much simpler to make use of the fields' sides, by placing gateways at the corners. The distinctive placement of the entranceways therefore argues that the Fengate fields might well have been used as stock enclosures.

It is well known that there is a strong link between droves and cattle (Hallam 1970:64). The precise role, however, of the droveway defined by ditches B21 and B38 is less obvious. Unlike the later, Romano-British droveway (Taylor 1969:fig. 1, no. 2), it runs parallel to the field edge and does not appear to lead to, or to come from, anywhere in particular. The presence of family or general occupation features around its southern end, the location of a well nearby, and the fact that it lies at a nodal point of the field system suggest that it played an important part in the business of animal husbandry. Its width is not sufficient to allow more than one, or at

most two, beasts to pass along side by side. We may therefore suppose that it was in some way connected with counting, inspecting, or marking animals as they passed by in single file. (I am indebted to Peter Reynolds for this suggestion.)

Miss Harman's analysis of the faunal bones (Appendix 7) shows that cattle played an important role in the economy, but that pigs and sheep/goats were also represented in significant numbers. The problem of interpreting these statistics is made more difficult by the high soil acidity, which is likely to distort the figures in favour of the larger-boned beasts. This factor may account for the sole representation of cattle in the field boundary ditches of Division 1 (Table 60), for it was found that bone preservation was better in the larger and deeper features.

The presence of *Bos primigenius*, red deer, and numerous arrowheads demonstrates the importance of hunting in the economy.

The botanical analyses (Appendices 3 and 6) of material from the large pit W17 and the well B3 indicate that in Phases 3 and 4 the site was open, with scattered scrub and much grass and weeds of occupation. There is no reason to suppose that the picture was substantially different in Phases 1 and 2. It can be shown, then, that livestock played an important part in the economy.

Let us now turn to the evidence for cereal cultivation. Artifactual data is slight. Unlike the earlier Neolithic house, the Late Neolithic settlement produced no sickle flints. Of the three fragments of ground stone found, only two could have been used as grain rubbers and these came from somewhat dubious stratigraphic horizons, very near the surface. All of the isolated features are either too shallow and flat-sided, or else too deep and wet, to have been successfully used as grain storage pits (Reynolds 1974). Pits, similar to those described by Reynolds (1974), have, however, been found in Iron Age contexts nearby. The settlement provided no post-hole arrangements that might suggest grain-drying racks or granaries. Neither the well nor the ring-ditch quarry-pit, features in the midst of the known field system, has produced direct botanical evidence for cereal cultivation. Furthermore, the widespread distribution of the isolated, shallow Division 9 pits would be unusual if large areas had been sown on a regular basis. In short, it is suggested that cereal crops played a very reduced role, if any, in the economy during Phases 1 and 2.

Direct archaeological evidence for house construction, in the form of post-holes or foundation trenches, has either been lost or never existed in the first place. However, the Late Neolithic settlement areas have undoubtedly been located. An earlier Neolithic house plan has already been found, and excavations in 1974 to 1976 produced some 25 Iron Age house plans. It is improbable, therefore, that peculiar site conditions erased all traces of Late Neolithic houses. In view of the above, it is tentatively argued that light, probably easily dismantled, dwellings were used. There is ample evidence of wood-working (for example, the log ladder and axed wood) so that a light structure need not necessarily have been a crude, tent-like affair.

So far our interpretation has involved only data provided by excavation, which is of necessity somewhat limited. Other sources of information must be tapped before any effort can be made to reconstruct daily or seasonal life

in the settlement. First, then, we shall consider aspects of the ancient environment.

An attempt to reconstruct local Late Neolithic Fen vegetation must suffer from the absence of detailed palaeoenvironmental studies in the peats east of Peterborough. Furthermore, it is notoriously difficult to correlate Fenland palaeobotanical observations over even a few miles without extensive borings. The archaeological importance of Fengate is such, however, that a few tentative general speculations must be attempted.

Appendices 3 and 6 show that the settlement was treeless in Phases 3 and 4, and the dense spread of features over the settlement area suggests that this was also true of Phases 1 and 2. Ruth Jones' identification of wood from the large pit W17 (Appendix 5) indicates that alder was growing in the vicinity in some instances, to judge by the log ladder's girth, as mature trees.

Radiocarbon dates for Phase 1 (HAR-397 2030 $\pm$ 100 bc, HAR-399 2020 $\pm$ 70 bc, and HAR-401 2010 $\pm$ 90 bc) suggest that the settlement was occupied some 400 radiocarbon years after the maximum extent of the Fen Clay transgression (Godwin and Willis 1961:72). There is, however, some evidence that the effects of this episode may have persisted longer in the Middle than in the South Level (Godwin and Vishnu-Mittre 1975:600). Geographically, the nearest detailed study of ancient Fen environment was that undertaken by Godwin and Vishnu-Mittre (1975) in and around Holme Fen, Whittlesey, and Trundle Meres. The area chosen for study was a "bay" on the extreme western Fen Edge, largely sheltered from base-rich run-off from the surrounding limestone hills. These conditions favoured the growth of acid peats which are known to have existed in the area from about 4000 bc. Indeed, a raised bog was so well established by ca 2500 to 2000 bc that it was able to prevent the westward progress of the Fen Clay transgression. However, although only 6 miles south of the present site, the oligotrophic plant communities of the Holme Fen basin are by no means typical of the open Fenland. At Fengate, for example, the base-rich waters of the Nene river system would have prevented the establishment of raised bogs which might otherwise be the natural climax of autogenic hydrosere development in the area (Walker 1970:136-37). The probable absence of ombrogenous upper peats in the Fengate area is important, since raised bogs, being poor in nutrients, are unlikely to support grasslands suitable for intensive grazing; they are also, moreover, soft under foot and would have impeded travel, both by man and by larger animals.

There is evidence from such widely separated sites as Shippea Hill, Woodwalton, and Wood Fen that, following the Fen Clay, the Upper Peat was formed under dry conditions (Godwin and Clifford 1938:389-90). Describing general conditions in the open Fen after the Fen Clay transgression, Godwin (1941:300) notes, "At first sedge fen, perhaps with local open water, and then fen woods of alder and willow re-established themselves, clothing the surface of the Fen Clay with a new mantle of peat. This process began at the margins and extended progressively seawards, and in the more marginal parts the fen woods which had been hardly affected by the marine invasion continued to form woods of pine, yew and oak." It will be recalled that Fengate is, of course, a Fen-margin site on the

extreme western edge of the Fenland Basin; it is therefore probable that local recovery from the effects of the Fen Clay transgression, such as they were, would have been quite swift. One might imagine alder and willow growing along the Fen Edge, a circumstance for which we have some evidence, with also perhaps reed and sedge beds further seaward. Such an environment would have encouraged the growth of at least seasonally available meadowlands along the landward parts of the Fen. This could, of course, have been extended and improved by selective tree-felling. Unfortunately, the Upper Peat near Fengate is very poorly preserved, but a boring at Dog-in-a-Doublet sluice, just 6 km east of the site, produced leaves of willow and wood of alder from a *Phragmites* Upper Peat, separated from the Fen Clay by about 1.20 metres of structureless peat (Godwin and Clifford 1938:389). There was no evidence for oligotrophic species in the Upper Peat.

By Phases 3 and 4 — the Early and Middle Bronze Age — conditions in the Fens, from the point of view of ancient man, had improved everywhere. Recovery, following the Fen Clay episode, was now well under way. Fox's well-known distribution maps show that Bronze Age groups, unlike those of the Neolithic and, especially, the Iron Age periods, were widespread over the peat Fens of Cambridgeshire (Fox 1923:maps 1–3). By this time local sedge fen would perhaps have given way to fen woods (Godwin 1941:300).

In sum, despite the dangers inherent in such speculations, we may suppose that the peats around the Fen Edge and the fringes of the "islands" would have supported rich grass suitable for at least seasonal grazing or hay-gathering. These natural resources would almost certainly have been exploited by the local Grooved Ware-using communities of Phases 1 and 2. In Phases 3 and 4 it is probable that longer-range expeditions for hay or grazing could have been undertaken by men and beasts. More marginal grazing, hitherto available only in the drier months, might by the Bronze Age have been accessible all year round.

It has been noted above that there is remarkably little evidence for cereal agriculture in any of the four phases of the settlement. Pollen spectra at Holme Fen and Trundle Mere show evidence for small-scale agricultural activity (probably temporary forest clearance) from the onset of zone VIIb, which lasted more or less throughout the Neolithic period (Godwin and Vishnu-Mittre 1975:fig. 11 and 12). This type of activity was also noted at Shippea Hill (Clark and Godwin 1962:fig. 5 and p. 18) and represents the kind of temporary clearance one would associate with the Fengate earlier Neolithic house.

The Late Neolithic/Bronze Age settlement, however, has many more points in common with the Middle Bronze Age activity noted by Godwin and Vishnu-Mittre (1975:fig. 14) in the area immediately southwest of Whittlesey Mere, than it does with most other Neolithic Fen sites. Aspects of this important study will be considered in greater detail in *The Third Report*, which will be wholly devoted to the Bronze Age. In the meantime, it should suffice to note that Godwin and Vishnu-Mittre (1975) observed two thin clay bands in the Upper Peat, spread over an area about a mile long by a quarter to a third of a mile wide, on the landward side of the mere. It was originally thought that these clay bands might be associated with the Fen Clay, but

Godwin has convincingly shown (Godwin and Vishnu-Mittre 1975:fig. 22) not only that the two sorts of clay are separated in time, but also that they were physically kept apart by a substantial raised bog. The two thin clay bands bracket the transition from zone VIIb to zone VIII (old VII/VIII); C-14 dates were obtained from both clay bands, the upper (Q-403) 1450 ± 120 bc, the lower (Q-404) 1465 ± 120 bc. The explanation offered is that the clay bands represent hill-wash, the result of quite substantial forest clearance in Middle Bronze Age times. Correlation with the pollen record shows a short forest clearance episode "definitely more pronounced than that in the early Neolithic" (Godwin and Vishnu-Mittre 1975:587). The whole episode is thought to have lasted about 150 years; although this time is shorter than that of the Fengate settlement, it is interesting to note that the pollen record shows that pasture was dominant, tending to succeed arable. The Fengate settlement is large — it should be remembered that its Fenward boundary is not yet known — and appears to have been occupied more or less continuously for 1,000 years. It is surely difficult to conceive of temporary clearance under such circumstances.

We have assumed, on *a priori* grounds, that the concentration of archaeological sites along the Fen margins around Peterborough was in great part due to the proximity of the Fens. If such is indeed the case, then data provided by historians of the largely undrained medieval Fenland can be used to provide information on many aspects of life not directly covered by the archaeological and palaeoenvironmental record.

From these accounts it would seem that "... meadowland constituted a most important element in the economy of the Fenland during the later Middle Ages. The meadows themselves seem to have been of every variety, from those rarely left uncovered by water to those which remained dry during the greater part of the year ... some meadows were surrounded with water and were reached only by boat; to other meadows the cattle were driven along paths ..."(Darby 1940:61-62). Seasonal flooding in the Fengate area would have involved mainly fresh water and must always have been a force to be reckoned with. "Normally the meadows were dry in summer, and the winter floods, provided they did not last too long, served only to make the meadow richer for the following summer. Some lowlands were probably more useful in their natural state than they would have been if permanently recovered from floods; and the possession of well-watered, well-grassed meadows would more than compensate for the occasional loss of the hay harvest through summer floods." (Darby 1940:62).

We have noted above that there is only very slight evidence for cereal agriculture in Late Neolithic and Early Bronze Age times at Fengate. If crops were grown, they were probably planted on the completely flood-free, light gravel or Cornbrash soils to the west of the site — land unfortunately covered by modern Peterborough. Comparisons with post-medieval descriptions of the Fens may not be out of place here. "Fenland farming ... was pasture farming in which crops played an important but subsidiary part. Some winter fodder had to be grown, as well as wheat and barley for domestic consumption; but the amount of land suitable for crops was small, and some of the food necessary to feed the large population was probably

brought in from other districts. Graziers engaged in rearing and fattening animals for the meat and hide markets were in the majority." (Thirsk 1953:26). Thirsk (1953:29) notes that cattle were of great significance in the 16th-century Fenland and that dairying, especially the manufacture of cheese, was also important. Sheep were second only to cattle in importance and horses were common, but pigs, because of the extensive felling of the woodlands, were not often found. Sheep were to be found in a very large number of small flocks, usually of less than 20 beasts.

"Fishing and fowling was the full-time occupation of a few who lived on the fringe of the Fens" (Thirsk 1953:26), and both provided a valuable resource during the months of winter. It is of interest to note that the draining of the Fens at Cowbit, in the parish of Spalding, was opposed by the inhabitants, who regarded the proposed flood-free grazing as a very poor substitute for their traditional winter fishing grounds (Thirsk 1953:26). The Fengate settlement's Fen-edge location meant that it was admirably suited for the winter pursuits of fishing, fowling, and, of course, eel-catching.

Seasonal movements, generally over quite short distances, have often played an essential part in Fenland life. D. L. Clarke, in his stimulating reassessment of the Somerset "lake villages" has proposed a far more elaborate and long-ranging pattern of seasonal movements than that advanced here, partly because crops are known to have played an important role in the economies in question (Clarke 1972:858-61). The suggestions, however, that in eastern England "the major population of agrarian farmsteads and hamlets centred on the hills (around the Fens)", and that there was a "movement of stock down to seasonally occupied lowland camps amidst the Fen pastures" cannot be accepted. This is (a) because of the rarity of nearby hillforts or camps (for the distribution of local Iron Age camps see *Ordnance Survey*, 1967) and (b) because immense ritual and settlement sites such as Fengate or Maxey are more obviously the focal points of prehistoric man than are the few hill camps or the hypothetical "camps amidst the Fen pastures".

Thirsk (1953:25) notes that "while seasonal conditions varied between the Fens, the arrangements for commoning were much the same everywhere. In winter, when large tracts were inundated, fishing and fowling came into its own, and the graziers removed their cattle to enclosed pasture in the drier parts of the parish." Fengate and other Fen-margin sites, such as Maxey, are situated on the nearest available flood-free land to the west of the Fens proper. It is suggested that, during the second millennium bc, Fengate was principally occupied in the winter months, when the Fens were largely flooded, and although hay had probably been cut in the summer, there would still have been many beasts to be fed on the very slow-growing Fen-edge pastures. In such circumstances land conservation measures would have been of paramount importance. We may therefore see the Fengate rectilinear enclosures as the Neolithic equivalent of the modern electric fence, which both rations grazing and prevents animals from straying. Enclosures would also have been necessary to keep out the wild cattle of the region. Cattle require more water than most other domestic

animals, and so small wattle-lined "sock wells" were dug and carefully maintained.

In winter, the reduced diet would have been augmented by trips into the Fens to net and trap wildfowl or fish. At the end of winter, a large part of the community would drive the herds into the Fen pastures, while a nucleus of, perhaps, the older folk, might remain around one prominent feature, such as the ring-ditch, both to lay claim to the land and to ensure that the next winter's grazing was not depleted by unwelcome visitors. It is of interest to note that Andrew Fleming has offered a similar, partially functional interpretation of the ring-ditches in the Wessex region (Fleming 1971:159-60); some other functional explanations are also suggested by Richard Bradley in Appendix 10.

This brief review of the Fengate economy does not give an impression of grinding poverty, marsh fever, and squalor; rather the picture is of a society well adapted to exploit environments richer than most in natural resources.

Chapter 7

Some Observations on the Micro-Settlement Pattern

In the Introduction of this report it was noted that settlement pattern analysis would be attempted at three levels: the intra-community level; the site, or micro-level; and the regional, or macro-level. The intra-community level has been considered in Chapter 6, where aspects of the macro-level were also touched upon in passing (for example, the relationship of the settlement to recent observations around Holme Fen). Fuller discussion of the macro-level, however, will be possible only when a study of the neighbouring Fen has been completed and when both previous and current excavations in the Peterborough area are published.

The earlier Neolithic house or hut, described in *The First Report*, most probably antedates, on the basis of two widely separated C-14 dates (GaK-4196 3010 $\pm$ 64 bc and GaK-4197 2445 $\pm$ 50 bc), much of the Fen Clay marine transgression, which would have reached as far west as Fengate only near its maximum extent. The house, then, might have been contemporary with the later Lower Peat. About 2 miles northeast of Dog-in-a-Doublet sluice, the Lower Peat was seen to interdigitate with several layers of the Fen Clay, indicating that the area "must have been a centre of equilibrium about which the conditions of fresh and brackish water fluctuated repeatedly . . ." (Godwin and Clifford 1938:372). Slightly less than 2 miles northeast of Dog-in-a-Doublet sluice, a band of *Sphagnum* peat was found almost immediately beneath the Fen Clay (Godwin and Clifford 1938:372, note). The presence of *Sphagnum* peat in this area is indicative of wet conditions, with local pools isolated from base-rich ground water and scattered oligotrophic plant communities. Clearly, the Lower Peat in the area would not have suited, for example, the transhumant pastoralism of Late Neolithic and Bronze Age times.

The floor area of the earlier Neolithic house would be adequate for one nuclear family only. Evidence for their economy is, unfortunately, very slight: no bone survives, but two sickle flints with working-edge diffuse (? silica) lustre would suggest that something was being cut. A few animals may also have been kept, although there is no direct evidence for this; perhaps one may posit a mixed economy based on horticulture/agriculture and livestock. This certainly would not conflict with our knowledge of contemporary groups elsewhere in the Fenland, and in Britain in general. Such a way of life would require a more substantial dwelling than the type it is suggested was used in the Late Neolithic settlement. In this regard, a study of ethnographic data has shown that square and rectangular houses are usually associated with more permanent types of settlement (Whiting and Ayres 1968:124).

The isolated settlement(s) of earlier Neolithic times gives way, after a gap of some 400 radiocarbon years, to an altogether different Late Neolithic/Bronze Age settlement pattern. This gap might very tentatively be seen to coincide with the Fen Clay episode; but whether this is so or not, it is still most surprising that no sherds of obviously Middle Neolithic type have yet been located on the site.

The later Neolithic period finds the site occupied by a number of communities, some large, some probably very small. Unfortunately, dating evidence is still too imprecise to say which of these groups are actually contemporary with one another. Despite this, the evidence for population increase, necessitating a variety of quite sophisticated land management measures, is overwhelming. The question as to whether these groups moved into the area from outside, or whether the expansion was the result of purely local demographic factors, cannot be answered until we have more data from the surrounding region.

This report has largely been concerned with one settlement, probably occupied by more than one nuclear family. This community was not completely on its own, however. Excavations in 1974 revealed an isolated pit (feature P59) which contained Grooved Ware, significantly different from that found in the main settlement to the south. The pit had been deliberately filled in, and charcoal gave a radiocarbon date (HAR -771) 2010 ± 70 bc which is contemporary with Phase 1 of the settlement.

A number of isolated Neolithic pits containing Peterborough and Grooved Ware are known from the earlier researches of G. Wyman Abbott (Abbott 1910, Leeds 1922, and Smith 1956). These features of the "Gravel Pits Settlement Area" in Fig. 3 were "excavated" under salvage conditions. There can, therefore, be no guarantee that small ditches, like those of Feature Division 1, were not missed. Pit P59 was, however, most certainly isolated and we might tentatively suggest that nucleated settlement was not the invariable Late Neolithic practice in the area.

The severely rectilinear, ditched, pre-Beaker enclosure excavated by Miss Mahany (1969) presents many problems of interpretation. Occupation debris was scarce and the northwest-southeast alignment of the enclosure is strikingly unlike that of the known Late Neolithic and subsequent Bronze Age enclosures which, as might be expected, are arranged at right angles to the Fens (FNG 1:fig. 1:ditches 1-15). Its use as a cattle corral might therefore be doubted, particularly when it is recalled that bones were almost non-existent within the ditches' filling. The absence of an entrance, other than a hypothetical (and perhaps doubtful) wooden bridge, is also surprising.

Beaker features are widespread over the site and are invariably isolated. Isolated finds are also quite common along the Fen Margin and in the Lower Nene valley, but only one plausible settlement is known — that at America Farm, some 2 miles northeast of the site (Clarke 1970:490).

The explanation for this complex pattern of nucleated and isolated settlement features must await the results of further research. Some preliminary hypotheses have been advanced in a recent paper (Pryor 1974d), but as these ideas are, at best, highly tentative, they will not be repeated

here. All that can be said with any certainty at this stage is that a simple solution is unlikely to prove adequate and that many models of increasing complexity must be tried before a coherent picture will begin to emerge. The progress made in Neolithic explanation at Fengate may be summarized thus: ". . . at the outset basically conservative and relatively slow-moving . . . but, once established, cross-fertilised and inspired to innumerable and sometimes splendid variations through the recurring opportunities of seasonal movements" (Case 1969b:186).

Appendix 1

Methods of Excavation 1971–74

Mechanical Excavation

GENERAL

The use of machines on sites as early as the Neolithic and on subsoils as yielding as silt or gravel poses many problems. Every precaution must be taken to minimize damage and to establish as accurately as possible the amount of information that will inevitably be lost (Pryor 1974b:4–6). It should be stressed, however, that the advantages of open-area excavation greatly outweigh the disadvantages.

Most of the site lies on the Nene First Terrace River Gravels. This (C) horizon is overlain by 30 cm of dark, clayey ploughsoil (the A horizon). (The development of the site's present soil cover is a problem to be approached in a forthcoming study. The terminology given here is that used in the field and is of unproven pedological significance.) The latter is heavily composed of nightsoil (Horton et al. 1974:pl. 7B). Despite repeated fieldwalking, only a few Romano-British potsherds and a light, even flint scatter have been found on the surface.

The B soil horizon is found between the gravel (C) and the ploughsoil (A), except to the northwest where it appears to be absent above the Cornbrash Limestone. Where it does occur, it is found in a uniform band about 45 centimetres thick. In many places the A and B horizons are separated by a thin deposit of blue-grey clay, about 20 centimetres thick. The B horizon is composed of uniform sand-silt with occasional gravel pebbles, Munsell 10YR 4/2 (dark greyish brown) being typical. The interface of the B and C horizons, particularly where the latter is silty, is rarely clear and is usually observed as a slightly paler band of sand-silt. It is indistinguishable in texture from that of the B horizon proper above it. The B/C horizon is about 3 to 5 centimetres thick.

THE "CONTROL" BALKS (FIG. 5)

Eight half-metre-square B horizon balks, distributed at random over the north part of the Storey's Bar Road subsite, Area 1, were sieved through 1/4-inch mesh screens, to establish how much information was being lost by the mechanical removal of overburden. It was decided not to extend these balks into the A horizon, both because of its known partially derived origin and because of the extra machine costs such obstacles would inevitably involve.

A total of 800,000 cm³ of B horizon sand-silt was sieved, yielding five flint waste flakes, an average of one flake per 160,000 cm³ of soil (for comparison, the wheelbarrow shown in Pl. 14 holds about 70,000 cm³). By contrast, the feature P9 (p. 58) gave an average of one find per 18,118 cm³ of soil; whereas the more densely packed feature P10 yielded one find per 2,803 cm³ of

filling. It is therefore most unlikely that any occupation levels have been removed by machine, although it must be recognized that a small proportion of artifacts has been lost.

THE ARCHAEOLOGICAL LEVELS, PREHISTORIC AND ROMAN

In 1971 Areas II and VII of the Padholme Road subsite were among the first to be cleared. Both were lowered to the top of the B horizon using the back acter of a JCB3c digger-loader fitted with a 3-foot, toothless bucket. The surface thus revealed was repeatedly cleaned by hand, and although air photographs showed two ditches to cross the site at this point, nothing was seen on the ground.

Subsequently, trenches through the B horizon, cut by hand, were also inconclusive. It was not until a large area of B horizon had been removed by machine that the indistinct ditch filling could be seen. Prehistoric features first became visible in the paler sand-silt of the B/C soil horizon. Miss Mahany also encountered the same phenomenon in 1968 (Mahany 1969).

Roman features, however, are first visible at a higher level than the B/C horizon. They appear to cut through the B horizon, and although somewhat contaminated with modern material brought down by earthworms, they can be seen almost immediately below the A horizon. These higher Roman deposits are characterized by weathered sherds of Castor Ware and by a distinctive clay filling, possibly representing one or more floods. "Belgic" Iron Age features, however, are not generally visible through the B soil horizon.

PADHOLME ROAD SUBSITE

Areas I to X were stripped in 1971 also using the JCB3c digger-loader back acter fitted with a 3-foot, toothless bucket. In 1972 Areas XI, XII, and the vicinity of the Neolithic house in Area XIII were again cleared with this machine, but fitted with a 5-foot, toothless ditch cleaning blade (Pl. 15). Area XIII was extended using an International B100 skid-shovel to remove the A horizon; the B horizon was cleared with the digger-loader and ditching blade.

VICARAGE FARM SUBSITE

The natural subsoil of Area I is mainly Cornbrash, a soft, weathered flaggy limestone, directly overlain by the ploughsoil. All but about 5 centimetres of ploughsoil was removed with a B100 skid-shovel, the remainder being cleared by the digger-loader and ditch cleaning blade. Area II of this site was cleared by the digger-loader alone.

NEWARK ROAD SUBSITE

Area I was cleared by the digger-loader and ditch cleaning blade. Area II was cleared in two operations: the A horizon and half of the B horizon were

removed by two skid-shovels (an International 175 and MF300); the remaining B horizon was removed by the digger-loader.

STOREY'S BAR ROAD SUBSITE

Area I was initially cleared in 1973 and extended in 1974 in two operations, in the same way as Area II of the Newark Road site just described.

Area II was cleared in 1971. This operation had to be carried out quickly, and loose earth had to be transported up to 300 metres. A self-powered Euclid TS24 scraper was used to remove the A and half of the B horizon. The remaining B horizon was removed by the digger-loader. Areas III and V were cleared by the digger-loader alone, Area V in 1974 and Area III in 1971. Area IV was cleared in 1972, using the same techniques that were used in Area I (Pl. 15).

Hand Excavation

The B/C horizon surface was cleaned using swan's-neck garden hoes. In certain cases, trowel-cleaning was also employed. In the first two seasons, excavation techniques varied considerably, since speed was an important factor.

In 1973 there was less pressure to develop the site. It therefore became possible for the first time to plot the precise horizontal location of each find. It was realized, however, that the resulting finds' density plans would be meaningless unless "noise" caused by gross variations of digging technique could be reduced.

Although outside pressure had been alleviated, it had not been removed. Hand trowelling of every feature — a process that might well take five seasons or more to complete — was out of the question. A compromise, therefore, was sought. It was decided that the same teams should excavate features in which differences of finds' density might be critical. Thus the same crews dug the well B3, the pit Y4, the large pit W17, the linear ditches, and the ring-ditch. A common digging procedure was introduced from the start of the 1973 season.

Soil was loosened and broken using a garden fork, and then searched *in situ*. When about one-third of a barrowload had been loosened, one member of the team shovelled the earth into a barrow using a small, adapted, household hand shovel. Each shovelful of earth was searched in the barrow by the second member of the team. The small shovel allowed a more careful search to be made and also discouraged the accumulation of loose earth, while at the same time limiting the area from which a find made in the barrow could have been derived. Selected sample sieving through 1/8-inch mesh was also carried out and isolated features, rich in artifacts, were excavated using trowels, with or without sieving. All finds' locations were plotted immediately upon discovery.

The use of 1/4-inch mesh dry-shaker screens in 1974 made it possible for the first time to sieve complete features other than small post-holes (Pl. 14).

The whole of Feature Division 10, together with the outlying features P9, P10, and P59, were sieved in this fashion. Wheelbarrows were calibrated, to give their capacity in cubic centimetres. In this way, the volume of irregularly shaped features could be readily and accurately established.

Appendix 2

A Note on the Fengate Soil pH

Four soil samples were taken: three from the north edge of the Storey's Bar Road sub-site, Area I and one (no. 1 below) from the filling of a feature. Dr. M. D. Hooper kindly had the samples tested by the soil pH metre at the Nature Conservancy Laboratory, Monkswood. The following results were obtained:

Sample 1	Sand-silt, depth 0.20 m, layer 1 of the ring-ditch	pH 7.2
Sample 2	A soil horizon (dark ploughsoil)	pH 8.1
Sample 3	B soil horizon (sand-silt)	pH 7.8
Sample 4	C soil horizon (sand and gravel)	pH 7.8

Dr. Hooper finds these figures surprisingly basic, having expected values of 6.5 and 5.5. He suggests the possibility of modern liming, a suspicion that has been confirmed by Mr. Tebbs, of Flagfen Farm, who owned much of the land before it was bought by the Peterborough Development Corporation. Fields in the neighbourhood have a reputation for being "sour". A naturally more acid soil is attested by the poor condition of many of the bones found during the present excavations.

Appendix 3

The Plant Remains

J. R. B. Arthur

Drawing by Miss P. Paradine

The plant remains from Fengate, taken from two deposits, form two distinct categories (Table 57).

The Large Pit W17

These remains represent plants that would normally come from a habitat associated with open or sparsely wooded country, possibly in an area of higher water table, or at least an environment where conditions are invariably damp. The exception to this is *Ranunculus bulbosus* L., which is usually found in drier conditions.

The dominant genus found in the pit is from the Sedge family; the achenes are well preserved and many are still enclosed within the perigynium (fruit enclosed within the perigynium). The absence of plants of the Gramineae family seems to preclude the possibility that the material came from a grazing area (but cf. Appendix 6). It should be stated, however, that many of these seeds are from plants that flower during the late summer and it is possible that some spring-flowering grasses may have dehisced their seeds from the rachis, in which case we would not find them so easily. Of the plants identified, Sedges are those most likely to be found in a meadow. These plants are particularly plentiful in an environment of wet grassland, marshes, or fens. *Chenopodium album* L. is frequently found in deposits of the Neolithic period and is a significant weed of agricultural land, formerly harvested as a useful source of greenstuff (Dimbleby 1967:32).

Plants from prehistoric times raise a number of interesting points. With regard to seed resistance, prolonged spells of temperatures below 9°C are required to kill many of the commonest weeds, including *Stellaria media*, which has been recorded from deposits of Palaeolithic and Neolithic times. From this one must assume that the seeds found are not the only plants that grew in the area under discussion. Other plants may have grown, but their remains quickly decayed because of cold temperatures, and they are past recognition. Also, many seeds fall into base-rich or acid soils where they decay quickly.

With regard to durability, many weed seeds are less exacting in their soil condition requirements than are arable crops. Weed seeds are hardy and better able to endure unfavourable climatic conditions (Englebrecht 1916:283). Hardiness morphologically refers to the hard seed coat or testa — the testa consisting of several layers of cells. Seeds from plant communities

Table 57 Plant species identified from samples taken from large pit W17 layer 5 and the well B3 layer 5. These features belong to Feature Div. 5 and 2 respectively.

	Pit W17 depth 170 cm 2.186 g	Pit W17 depth 147 cm 18.730 g	Well B3 layer 5 1.942 g	Well B3 bottom of layer 5 3.260 g	
<i>Ajuga reptans</i> L.	3	1			Average dimensions 3.0 mm × 1.8 mm
<i>Anthriscus sylvestris</i> (L) Hofm.	1				6.0 mm × 1.5 mm
<i>Anthriscus</i> spp.			3		6.0 mm × 1.5 mm
<i>Arctium minus</i> Bernh. ssp. <i>menorsum</i> (Leq.) Syme			1	1	5.5 mm × 1.5 mm Achene
<i>Carex flacca</i> Schreb.	4	3			1.5 mm × 1.0 mm Nut
<i>C. pendula</i> Huds.		1			2.0 mm × 1.0 mm Perigynium
<i>C. pilulifera</i> L.				1	2.0 mm × 1.0 mm Perigynium
<i>C. spp.</i>	10	12			1.5 mm × 1.0 mm Nut
<i>Chenopodium album</i> L.	1	7	1	1	1.5 mm diameter Nutlet
<i>Galeopsis tetrahit</i> L.	1				2.8 mm × 2.5 mm Achene
<i>Ranunculus bulbosus</i> L.	1				3.2 mm × 2.5 mm Achene
<i>R. repens</i> L.		1			1.3 mm × 1.2 mm
<i>Reseda lutea</i> L.		2			2.0 mm × 1.2 mm
<i>Rubus fruticosus</i> L. agg.	1		20	40	3.0 mm × 1.9 mm
<i>Sambucus nigra</i> L.		6	18	26	1.9 mm × 0.5 mm
<i>Sonchus asper</i> L.		1			1.0 mm × 0.7 mm
<i>Stellaria media</i>	5	3	1	1	

of this type will endure for many generations in the soil, or in a composition of vegetable material, especially when the conditions are constantly moist. Those seeds that do not have a hard testa will quickly succumb to soil conditions and disappear in soil erosion. For example, *Galeopsis tetrahit* L., once very common, has, with the advent of chemicals, almost completely disappeared from the cultivated areas of the countryside in the past decade.

The Well B3

The remains from the well represent a flora that is significantly different from that of the pit. As stated, the remains are characteristic of a more open habitat, consisting mainly of seeds from deciduous trees and shrubs, which may have been used for food. While it is presupposed that the deliberate system of hedging was not introduced until Anglo-Saxon times, thickets of *Sambucus* and *Rubus* could easily and conveniently have formed a naturally protected and partially enclosed area for cattle. The most important species from this deposit is *Sambucus nigra* L. Not only were the seeds preserved, showing the corrugated surface and small sunken hilum, but also the small purple berries which are in near perfect condition. Regarding *Rubus fruticosus* L. agg., these plants have very long, prickly prostrate stems which frequently root when they touch the ground, thus forming a natural barrier. The soft fruits would probably have been appreciated as an easily accessible, economic food. The seeds, like those of *Sambucus*, are very common, and their convex faces and honeycombed surface structure can be clearly seen. *Rubus fruticosus* is extremely polymorphic, producing seeds which vary considerably (Fig. 50).



Pamela J. Paradine

Fig. 50 Seeds of *Rubus fruticosus* L. agg. from layer 5 of the well B3, showing the variability found.

Appendix 4

A Note on the Treatment of Botanical Samples, Fengate 1973

The plant material submitted to Mr. Arthur had been removed from its sand-silt matrix in the field. Aspects of this work were supervised by Dr. M. D. Hooper of the Nature Conservancy Laboratory, Monkswood, to whom thanks are due. Large, untouched samples from all features and most layers are at present stored in temporary premises, but it is planned to have all the Fengate soil samples moved to permanent Nene Valley Research Committee storage.

For various reasons, unassisted flotation of organic material was not found to work on the Fengate samples excavated in 1973. Consequently, large soil samples were taken from all features that might have significant organic content, in the hope that these could be separated by the specialists concerned. A few weeks after the start of the first season this policy was extended to all layers of all features. The policy obviously caused storage problems and as a result the following technique of screening and concentration was developed.

One sample, from which pebbles had been removed by hand, weighed about 200 grams. It was mixed with an equal weight of water, and gently stirred, and then 10 g of *Calgon* (sodium hexametaphosphate, an easily obtained commercial water softener), and 5 g of baking powder (sodium bicarbonate) were added. These foaming agents, while freeing a considerable quantity of material, were not found to be sufficient to do the job. Therefore, after the mixture had been gently shaken or lightly stirred (rough handling will damage the delicate botanical remains) for 15 minutes, it was poured into a stack of geological test sieves. Four sieve mesh sizes were used: 5.6 mm, 2.8 mm, 1.4 mm, and 600 microns.

Material from the top two sieves was removed by hand using a small paintbrush. The sample from below the finest sieve was also kept. The large accumulation of deposit in the two finest sieves was found to be too massive for hand sorting. It was therefore gently tipped into a larger container and there mixed with three or four times its own weight of water. Twenty-five grams of Epsom salts (magnesium sulphate) was then added to raise the specific gravity of the water and thus facilitate flotation. This technique was found to be very effective although in some particularly difficult cases small additional amounts of sodium bicarbonate had to be added. The material that floated to the surface was collected with a gauze skimmer.

The three different classes of sample, those from the top two sieves, those that passed through all sieves, and those that accumulated in the two finest sieves, were kept apart and marked accordingly. Samples were preserved in water and alcohol with a few drops of glycerine added to prevent brittleness. The importance of thoroughly rinsing all sieves, basins, and jars between each sample cannot be over-emphasized.

We found that one person could treat three samples in a day. This technique is suggested for sites without an assured and continuous water

supply, where large features with organic-rich deposits are the exception rather than the rule. Apart from the sieves, the capital outlay and running costs are small, and on sites such as Fengate where the separation of organic remains from a fine clay matrix can be difficult, the flexibility of the method is an important advantage.

Appendix 5

The Wood Remains

Ruth Jones

Wood samples were taken from two features excavated in 1973. All pieces large enough to hold together adequately (diameter greater than about 7 mm) were recovered.

The well B3 layer 5 (Fig. 17)

Sample number	Description	Identification
125	Mass of twigs	<i>Corylus</i>
124	Mass of twigs	<i>Corylus</i>
74	Small twigs	<i>Corylus/Betula?</i>
123	Peaty twigs	<i>Corylus</i>
layer interface 4/5:		
92	Branch	<i>Corylus?</i>

Large pit W17, layer 5 (Fig. 27)

Sample number	Description	Identification
2272	Mature trunk, Dia. 17 cm	<i>Alnus</i>
222	5 branch fragments	<i>Betula</i>
212	Small branches	<i>Betula/Corylus?</i>
217	Small branches	<i>Betula, Alnus, Fagus</i>
221	Sharpened stake	<i>Quercus</i>
211	Twigs	<i>Alnus</i>
191	Twigs	<i>Alnus</i>
213	Twigs	One <i>Betula</i> , rest <i>Alnus</i>
215	Twigs	<i>Alnus</i>
214	Twigs	<i>Alnus, Corylus</i>
216	Twigs	<i>Betula</i>
219	Twigs	<i>Corylus, Betula, Alnus</i>

The mature *Alnus* trunk was probably about 30 to 50 years old, but the rings were very difficult to distinguish.

The assemblage from both features is composed of typical Fenland species.

Appendix 6

Pollen Identification

J. H. McAndrews

Six samples were taken from a core through layer 5 of the large pit W17 (Fig. 27). The samples were at 1.40, 1.51, 1.57, 1.60, 1.64, and 1.67 m below the site surface (3.05 O.D., Grid 67.5/90). Pollen analyses yielded well-preserved pollen and spores in each sample, but as the assemblages from each sample were generally similar, the six individual samples were combined to form one large assemblage.

Fifteen taxa were identified (12 herbaceous and 3 woody), but of the total pollen grains counted and identified 97.6% were herbaceous and 2.4% woody. There is thus good evidence for herb dominance.

The assemblage cannot be correlated with existing pollen diagrams because of the scarcity of tree pollen. The herbaceous pollen is dominated by weeds and grass, implying an open environment with plenty of sunlight. Generally speaking it is the kind of assemblage one would associate with settlement.

Identification	Count	%
<i>Pteridium</i> (bracken)	118	50.2
Gramineae (grass)	34	14.5
<i>Plantago lanceolata</i> (ribwort plantain)	9	3.8
Liguliflorae (? sow thistle)	8	3.4
Tubiflorae (? syme)	3	1.3
<i>Artemesia</i> (mugwort)	1	0.4
Caryophyllaceae (? chickweed)	4	1.7
Umbelliferae (? hedge parsley)	2	0.8
<i>Dryopteris</i> type (marsh fern)	2	0.8
<i>Corylus</i> (hazel)	1	0.4
<i>Salix</i> (willow)	2	0.8
<i>Fraxinus</i> (ash)	1	0.4
Chenopodiaceae (? fat hen)	2	0.8
Cyperaceae (sedge)	2	0.8
<i>Lycopodium</i> (clubmoss)	3	1.3
Indeterminable	39	16.6
Unknown	4	1.7

Appendix 7

The Animal Bones

Mary Harman

All the bone was examined. Owing to the acidity of the soil, most of the features yielded little bone, but there was a considerable quantity from four features: the ring-ditch W1, the well B3, the large pit W17, and the pit Y4. Pit Y4 contained just over half of the 250 identifiable, unburnt bones found on the site.

Some of the bones were virtually whole and complete, others were complete but in fragments, and some were represented only by odd fragments. The state of preservation varied, some of the bones being hard, others eroded and crumbly. Most of the those in the four features listed above were in an excellent state of preservation. Most of the bone was identifiable, though there were 15 small groups of calcined fragments, of which the vast majority were very small and unidentifiable. There were also several examples of teeth, mainly of cattle, consisting only of splinters of enamel.

The age of the animals at death has been assessed, where possible, from the state of epiphyseal fusion and from the state of tooth eruption and degree of tooth wear, using the criteria published by Silver (1963).

The minimum number of animals present was estimated for each species from the bone that occurs most frequently, but the differences in age and size represented among the rest of the bones were also taken into account. The figures have been estimated for the site as a whole, rather than for each feature individually.

Complete bones or parts of bones of adult animals were measured, and the results are shown in Table 60. Table 58 shows the numbers of bones identified for each species and the minimum number of animals present. The assessment of the ages at death of the cattle, sheep, and pigs, estimated from the jawbones and teeth, is shown in Table 59.

As the sample is a very small one, the estimates of the relative proportions of the species and the following observations should be treated with caution.

Both the number of bones found and the minimum number of animals present indicate that, as at most other British Neolithic sites, cattle, pigs, and sheep or goats were the most important animals, with sheep/goats being of the least significance.

Cattle and pigs vary considerably in their relative importance, according to whether one considers the total number of bones found or the minimum number of animals present. It should also be noted that while cattle are represented by a wide range of bones, nearly half of the pig bones found are from the head.

Cattle

Most of the cattle bones are from the domestic ox, *Bos taurus*. Evidence from

teeth suggests that most of the animals had survived at least two years, indicating that they had reached their maximum size before they died or were killed, and possibly had been used for purposes other than meat production. Evidence from epiphyseal fusion gives similar ages but also indicates the presence of at least one young animal which died at less than six months. Some of the bones had cut marks, probably from butchering. The cut marks were on three scapulae (at the base of the spine at the proximal end), and on one ulna (at the proximal end, at the point of articulation with the proximal end of the radius).

Bos primigenius was represented by several large bones, distinguished by the letter Bp in the table of measurements (Table 60). Fig. 51:1-3 compares the size of radii, astragali, and metatarsals from Fengate and Star Carr (Fraser and King 1954), Windmill Hill (Grigson 1965) and Durrington Walls (Harcourt 1971). It demonstrates that one astragalus and three metatarsals from Fengate can almost certainly be attributed to *Bos primigenius*, since the metatarsals are particularly large. The radius with a proximal width of 86.6 mm falls low in the range of measurements from Star Carr, but it is higher than all the measurements from Durrington Walls and most of the Windmill Hill measurements. It may be from a particularly large *Bos taurus* or a small *Bos primigenius*, or perhaps from a cross-bred animal. The following bones were very large but not measurable: a proximal end of an ulna, two right acetabula, and two metatarsal shaft fragments.

Pigs

Four very large, anterior portions of mandibles may represent wild pigs. Apart from these, all the pig bones are probably from domestic animals. Evidence from tooth eruption and wear suggests that few of the animals were kept beyond the age at which they would have attained their maximum size. In addition to the ages derived from the evidence of the teeth, there is evidence (from a very small femur) for one neonatal death.

Sheep

It is possible that goats are represented among the sheep bones, though the skull found was that of a sheep. The skull, of a small horned animal of about two years (three and a half years, C-18 figures), is almost complete, lacking only the premaxillae, and the nasal bones; the left horn core and zygomatic arch are slightly damaged. The few other bones, none from very young animals, were fragmentary.

Horse

Only one bone was found, from a small animal.

Dog

Several bones, from the same animal, were found.

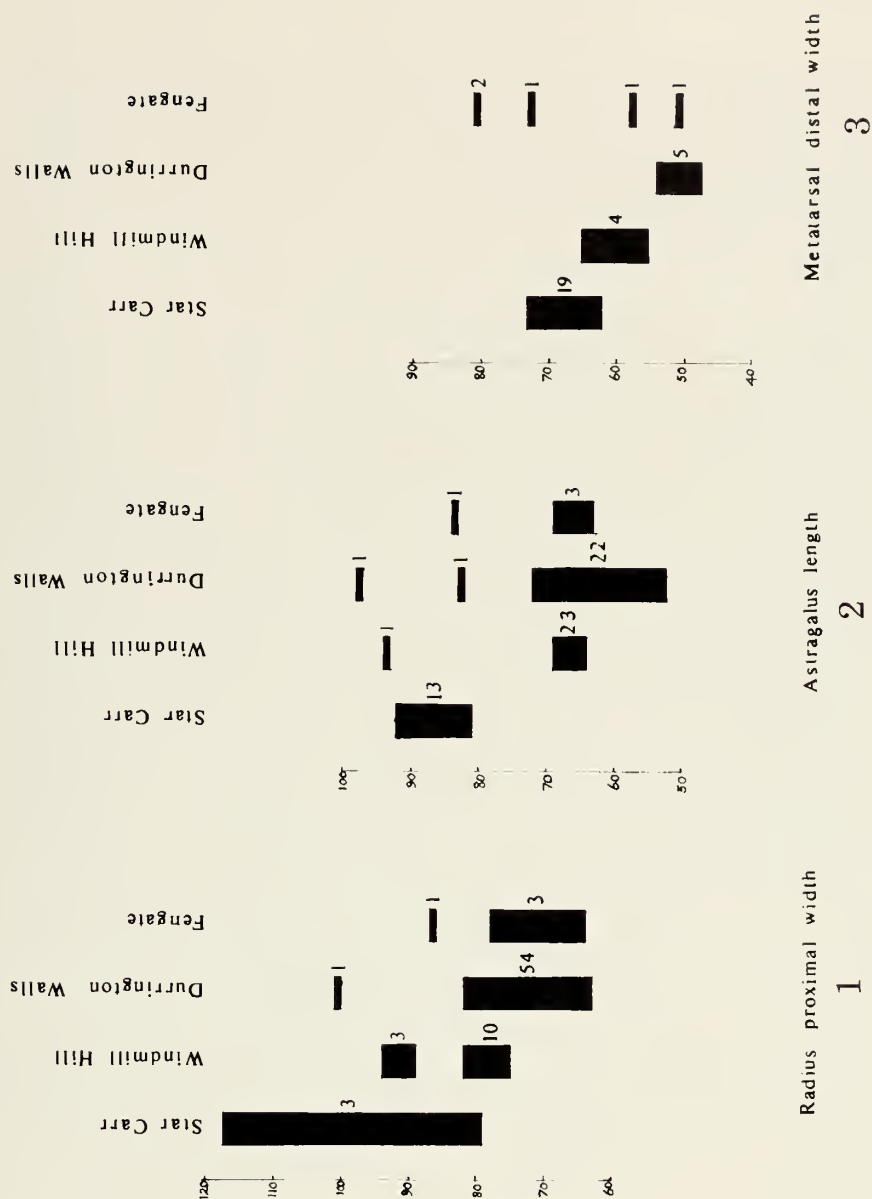


Fig. 51 Diagram illustrating (in millimetres) the range of results for a particular *Bos* bone measurement from each of the four sites discussed in Appendix 7. The number of bones measured is shown to the right of each bar (in part after Jewell 1963).

Red Deer

The few antler fragments found could have been imported, but the metatarsal shaft is more likely to indicate the presence of these animals in the vicinity.

The faunal economy of the Late Neolithic population of Fengate depended principally on domestic animals, particularly cattle and pigs, though it is difficult to assess the relative importance of these two species. Sheep, ponies, and dogs are also represented.

Of the wild animals, *Bos primigenius*, possibly wild pig, and red deer also contributed to the economy.

Table 58 Frequency of bones found from each species and minimum number of animals present

	Cattle			Sheep		Pig		
	L		R	L	R	L		R
Tooth		33					8	
Skull	1	1	4			3		4
Horn-core	2	1	3					
Maxilla	1		2			2		2
Mandible	3	2	4	3	1	1	4 pr. 1	6
Vertebra		10						
Scapula	8	1	4		2	1		3
Humerus	6	1	5		1	1		1
Radius	6		4			1		
Ulna	1		4			1		2
Metacarpal	4	1	2					
Pelvis	4		4	2		2		1
Femur	2		4		1	1		2
Tibia	3	1	5		2	2		3
Astragalus	1		4					1
Calcaneum			1		1			
Metatarsal	1	10	4					
Phalanx 1			1					
Phalanx 2			1		1			
Phalanx 3				one whole skull				
Total (excluding teeth)		127		15		45		
		67.9%		8.0%		24.1%		
Minimum number of animals	5 (Wild) 9 (Domestic)			2		4 (Wild) 10 (Domestic)		
		48.8%		6.6%		47.6% (Domestic animals)		
Also: Horse:	Metatarsal L							
Dog:	Skull parts L and R parietals Radius and ulna L Astragalus L							
Red Deer:	Antler 1 large tine, 1 small tine Metatarsal shaft							
(Numbers falling between left and right columns refer to bones that cannot be allotted to either side.)								

Table 59 Age of animals at death, estimated from the state of tooth eruption and degree of tooth wear

Cattle		Modern figures	C-19 figures
Maxilla	L Pm4, M1, 2, 3 last cusp light wear	ca 3 yr.	ca 4½ yr.
	R Dm3, M1, 2, 3 erupting	ca 2 yr.	ca 3½ yr.
	R Pm4, M1, 2, 3 in wear	over 3 yr.	over 3 yr.
Mandible	L Pm4, unerupted, M1 in wear	ca 2½ yr.	ca 3½ yr.
	L Pm4, M1, 2, 3 last cusp light wear	ca 3 yr.	ca 5 yr.
	R M1, 2 erupting	ca 1½ yr.	ca 2½ yr.
	R Dm1, 2, 3, M1, 2 barely worn	ca 1¼ yr.	ca 2½ yr.
	R Pm4, M1, 2, 3 in wear	over 3 yr.	over 5 yr.
Tooth	Upper M3 coming into wear	ca 2½ yr.	ca 5 yr.
	Upper M3 coming into wear	ca 2½ yr.	ca 5 yr.
	Upper M3 in wear	over 2½ yr.	over 5 yr.
	Lower M3		
	Lower M3 in wear	over 2½ yr.	over 5 yr.
	Lower M3 in wear	over 2½ yr.	over 5 yr.
	Lower M3 in wear	over 2½ yr.	over 5 yr.
	Lower M3 in wear	over 2½ yr.	over 5 yr.
	Lower M3		

Sheep		Modern figures	C-18 figures
Maxilla	L and R Pm2, 3, 4M 1, 2, 3 light wear	ca 2 yr.	ca 3½ yr.
Pig			
Maxilla	L M1, 2 erupting L and R M1, 2, 3 1 worn, 3 light wear R Dm3, M 1, 2	ca 9 mo. ca 1¾ yr. ca 1 yr.	ca 1½ yr. ca 3 yr. ca 2 yr.
Mandible	L and R adult large L and R adult large L and R adult large L and R I, 1 erupting, 2 unerupted L1, 2 unerupted R Dm 3 worn, M1 barely worn R Dm 3, M1 light wear R M1, 2 light wear R M2, 3 very light wear R M1, 2 1 worn, 2 light wear M2 barely worn M2 light wear M3 light wear M3 light wear M3 worn	ca 1½ yr. under 1½ yr. ca 6 mo. ca 9 mo. ca 1¼ yr. ca 2 yr. ca 1¼ yr. ca 1¼ yr. ca 1¼ yr. ca 2 yr. ca 2 yr. ca 2 yr. ca 2 yr. ca 2 yr. ca 2 yr. ca 2 yr. ca 2 yr. over 2 yr.	ca 2½ yr. under 3 yr. ca 1 yr. ca 1½ yr. ca 2 yr. ca 3 yr. ca 2 yr. ca 2 yr. ca 2 yr. ca 3 yr. ca 3 yr. over 3 yr.
Tooth			

Table 60 Measurements (mm) of complete bones or parts of bones from adult animals

Cattle									
Horn core	basal circumference	114	114	ca 160	—				
	length	—	700	162	at least 180				
Humerus	distal width	74.8	65.7						
Radius	total length	250	253	—	—	—	—	—	—
	proximal width	—	66.3	78.0	63.9	—	—	—	—
	distal width	—	55.0	—	74.9	63.3	64.6		
Metacarpal	proximal width	50.2							
Tibia	distal width	48.0							
Astragalus	length	63.0	65.9	68.3	83.9 (Bp)				
Calcaneum	length	177 (Bp)							
Metatarsal	length	224	—	—	—	—	—	—	—
	proximal width	47.5	42.0	41.2	—	—	—	—	—
	distal width	57.9	—	—	ca 72.0 (Bp)	80.6 (Bp)	80.4 (Bp)		
Sheep									
Skull	nuchal crest—anterior end of maxillae				180				
	occipital condyles—anterior end of maxillae				171				
	greatest width of cranium				62.6				
	width of cranium post orbits, ante horn cores				77.2				
	maxillary tooth row				64.6				
Pig									
Radius	proximal width 29.2								
Horse									
Metatarsal	proximal width ca 42.0								
Dog									
Radius	length 149								

Table 61 Animal bone identifications by feature (no bones were found in Feature Div. 6)

FEATURE DIV. 1

Feature R21, layer 1

Cattle: Radius L, 1 fragment
Premaxilla, 1 fragment

Feature W24, layer 1

Cattle: Horn core, 1 fragment

Feature B43, layer 1

Cattle: Tooth, M fragment
Mandible R

Feature R2, layer 1

Cattle: Tooth, fragments of 2 (upper molars)
Vertebra, fragments of 1 (thoracic/lumbar vertebra)
Femur R, 2 fragments
Radius R, 1 complete
Metacarpal, 1 fragment

Layer 3

Cattle: Tooth (2 upper M1/2, upper M3)

FEATURE DIV. 2

Feature B3, layer 1

Cattle: Teeth, 3 (2 upper M1/2 lower M1/2)
Maxilla R, 1 fragment
Sheep: Scapula R, 1 fragment
Horse: Metatarsal L, 1 fragment

Layers 2 and 5

Cattle: Tooth (1 upper M2)
Vertebrae, 3
Scapula L and fragment
Humerus L, 1 fragment
Radius L, 1 fragment
Ulna R, 1 fragment
Metacarpal L, 1 fragment
Tibia, 1 fragment
Sheep: Pelvis, L acetabulum
Tibia R, 1 fragment
Pig: Tibia L, 1 fragment

FEATURE DIV. 3

Layers 1–3

Cattle: Rib, 4 fragments
Vertebrae, 1 complete, 3 fragments
Skull, 2 fragments
Horn core R
Teeth, 11 (4 upper M1/2, 6 lower M1/2. All in wear.)
Mandible, L 5 fragments, R 1 fragment
Scapula, L 5 fragments, R 3 fragments, 2 blade fragments

Humrus, L 1 fragment, R 3 fragments
 Radius, L 4 fragments, R 2 fragments
 Ulna, L 1 fragment, R 2 fragments
 Metacarpal, L 2 fragments, R 2 fragments
 Pelvis, 3 L, 2 R fragments
 Femur, 2 L fragments, 2 R fragments
 Carpal, 2
 Tibia, 3 R fragments, 2 L fragments
 Calcaneum, R
 Astragalus, 1 L, 3 R, 1 R fragment
 Scaphocuboid, 1 L fragment
 Metatarsal, 1 L, 2 R shafts; 4 distal ends (4 fused); 2 fragments
 Phalanx 1 R
 Sheep: Mandible R and fragments
 Humerus R, 1 fragment
 Pelvis, L ilium
 Femur, 1 shaft fragment
 Calcaneum R
 Pig: Skull, 3 L, 4 R, various bones
 Maxilla, L and R, 1 R fragment
 Mandible, 4 L and R anterior, 1 L anterior, 5 R fragments
 Teeth, 2 M3
 Vertebra, axis fragment
 Scapula, 1 L, 3 R blade fragments
 Humerus, 1 L, 1 R fragment
 Radius, 1 L
 Ulna, 2 R fragments, 1 L fragment
 Pelvis, 2 L and 1 R fragment
 Femur, 1 L, 1 R fragment
 Tibia, 1 L, 2 R fragments
 Astragalus R
 Red deer: Tine, 2 fragments
 Metatarsal, 1 fragment

FEATURE DIV. 4

Layer 1

Cattle: Teeth, 2 (upper M3, fragments of molar)
 Scapula L
 Metatarsal, 1 in fragments
 Mandible, 1 fragment
 Ulna R, 1 fragment
 Phalanx 2, 1

Layer 2

Cattle: Metatarsal, R and shaft fragments
 Mandible, 1 fragment
 Carpal, 1
 Teeth, 2 (M1/2, lower M3)
 Pig: Tibia R, 1 fragment

Teeth, 1 (upper canine)
 Dog: Various bones from 1 animal
 Deer: Antler, 1 40-cm fragment
 Layer 3
 Cattle: Humerus L, 1 fragment

FEATURE DIV. 5

Layer 2
 Cattle: Teeth, 3 (upper M1/2, upper M3, lower M3)
 Humerus 1 L, 1 R fragment
 Radius R, 1 fragment

Layer 5
 Cattle: Skull, 2 L, 1 R fragments
 Horn cores, 2 L, 1 R; all shorthorns
 Tooth, 1 (lower L M3)
 Vertebra, 1 (lumbar)
 Ribs, 2 complete, 1 fragment
 Scapula, 3 L, 1 R fragment
 Humerus, 2 L fragments
 Pelvis, 1 L, 2 R fragments
 Tibia, 2 R fragments
 Metatarsal R and 2 fragments
 Sheep: Skull, 1, almost complete, horned
 Ribs, 2 fragments
 Scapula R, 1 fragment
 Tibia R, 1 fragment
 Pig: Femur R, 1 fragment

FEATURE DIV. 7

Feature B1, layer 1
 Cattle: Teeth, 2 (upper M1/2, lower M1/2)
 Feature B24, layer 1
 Cattle: Tooth, M fragment
 Pig: Teeth, 4 M fragments (M3, M2)
 Feature B50, layer 1
 Cattle: Tooth fragments

FEATURE DIV. 8

Feature W18, layer 1
 Cattle: Tooth, M fragments
 Pig: Tooth, 1 (M2 crown)
 Feature W28, layer 1
 Cattle: Mandible R
 Layer 2
 Cattle: Metacarpal L, 1 fragment

FEATURE DIV. 9

Feature R1, layer 1
 Sheep: Mandible, 1 fragment calcined

	Ulna R, calcined fragment
	Carpal, 1 fragment
Feature R5, layer 2	
Cattle:	Skull, fragments of ear region
	Maxilla R and L
	Mandible R
	Vertebra, 1 fragment
	Radius L, 1 fragment
	Femur R, 1 fragment
	Tibia L, 1 fragment
Pig:	Mandible R
Feature Y12, layer 1	
Cattle:	Tooth, M fragments

Appendix 8

A Note on the Two Human Skeletons from the Fengate Ring-Ditch

Calvin Wells

Inhumation 1

This is a grossly disintegrated and incomplete skeleton. It consists of the badly smashed right side of the cranial vault, a few fragments from the left side of the vault, a much damaged fragment of maxillae, and a small part of the mandible. These few cranial elements are now precariously held together by an application of polyvinyl acetate. The post-cranial skeleton, which showed that this was a crouched burial, had virtually disintegrated and survives as little more than the cast which was made of it *in situ* at the time of excavation. A few fragments of vertebrae are present, some tiny splinters of long bones, and a few fragments of articular surfaces of humerus, radius, and femur.

The dental evidence (with the first permanent molars already in the mandible, the central incisors partly formed and erupting, but the deciduous canines and first and second molars still in the jaw) suggests an age of about six to seven years. The exact state of this dentition is uncertain. The permanent molars show almost no attrition, but it is moderately extensive on the deciduous teeth, with substantial flattening of the cusps and exposure of dentine. The maxillary central incisors show a slight tendency towards being "shovel shaped", a feature that is well known from its common occurrence in Eskimo jaws, but which also occurs sporadically in other populations, including the early British.

The permanent central incisors and first molars also show slight ridges and irregularity of the enamel. This condition of enamel hypoplasia, is caused by some adverse factor influencing the formation of the teeth during their development in the jaw. Some illness of the child, such as bronchitis, dysentery, or perhaps even an episode of malnutrition might account for this.

It is almost impossible to say much about the physical type of this child. A very tentative estimate suggests that the skull was close to 178 mm in maximum sagittal length, and there is a strong subjective impression that it was narrow in proportion to its length — in effect, a long dolichocranial.

The post-cranial skeleton, as far as can be judged from the surviving cast and other scraps, was probably disproportionately small and lightly built. Accurate measurement of the (diaphyseal) length of the long bones is impossible, but a cautious estimate of some maximum lengths suggests: humerus, about 170 mm; femur, about 230 mm; tibia, about 150 mm. These measurements indicate an age of five to six years, which is rather younger than the age inferred from the teeth.

No certainty is possible here, but this combination of a long narrow skull, a very light and gracile skeleton, and some disparity between dental and long-bone ageing suggests (if the evidence can be relied on) that this child was of Neolithic, rather than Bronze Age, stock.

There is insufficient evidence to justify any diagnosis of its sex, and no evidence as to the cause of death.

Inhumation 2

This, like Inhumation 1, is a much broken and incomplete skeleton. It is, however, a better specimen, and some large fragments of cranial vault survive, as well as numerous post-cranial elements.

The surviving parts of the skull consist chiefly of the occiput and parietals which, when received, were held together around a matrix of plaster. Other cranial elements include a broken mandible and some fragments of the upper jaw.

Post-cranial remains include damaged vertebrae, parts of the pelvis, lengths of rib, broken scapulae, and pieces from the shafts of most long bones, including major fragments of humeri, femora, and tibiae.

The dental evidence (with the first permanent molars erupted and showing light attrition, the second molars almost fully erupted but unworn, and the second premolars still deep in the alveolus) would be compatible with an age of 11 to 12 years. The juvenile status of this person is also confirmed by the fact that no epiphyseal union has taken place at the proximal ends of a humerus and a femur, or at the distal ends of an ulna and radius.

Very few metrical details can be taken with any confidence. A reconstructed maximum (diaphyseal) length for the femora is about 350 to 360 mm, which would confirm that this child was probably about 12 years old. The transverse and antero-posterior diameters of the left femur are 26.6 and 18.1 mm, giving a Meric Index of 68.0 (Hyperplatymetric). The antero-posterior and transverse diameters of the right tibial shaft are 26.3 and 22.3 mm, giving a Cnemic Index of 84.7 (Eurycnemic). A very tentative reconstruction of the posterior part of the cranial vault shows that the maximum biparietal breadth was 132 mm. The parietals and occipital suggest a somewhat high and globular cranium, but this cannot be firmly asserted in the absence of the anterior part of the skull. Two very small wormian bones are present in the left half of the lambdoid suture. An area of bone around the internal occipital protuberance survives and shows that the sagittal sinus turns to the left, instead of the more usual turn to the right.

A third Trochanter, probably with a separate epiphysis, appears to be developing on the left femur.

The surviving fragments of pelvis, together with the mastoid area of both temporal bones, strongly suggest that this was a male.

His racial affinities are less certain. The hint of a high, somewhat globular skull, which is, for his years, already fairly heavily structured, is distinctly different from Inhumation 1 and rather suggests that he may have been of Beaker or Bronze Age stock. But this is based on very subjective evidence,

and it should not be pressed if the archaeological data point at all strongly to the contrary. No evidence as to the cause of his death is present.

An interesting feature is the retention of the mandibular left second deciduous molar, lying mesial to the first permanent molar. This deciduous molar shows gross attrition. The buccal side of the tooth has been worn almost down to the alveolus, leaving a sharp lingual edge and a sharply sloping surface in between; this surface shows evidence of the formation of secondary dentine. This condition, together with the attrition on the first permanent molar, indicates that this boy was accustomed to a tough and abrasive diet. His canines and first molars also show irregularities of the enamel, that is hypoplastic defects, which presumably resulted from illnesses during his early years of childhood. It is, however, impossible to do more than speculate as to the nature of these maladies.

Appendix 9

A Microwear Study of the Flints from Fengate, Pit Y4

Barbara Voytek

This report contains the results of a microwear analysis of a flint assemblage recovered from pit Y4 (pp. 30-33 and Fig. 20). In the first phase of the analysis, the 268 flints were examined macroscopically for techno/morphological properties and microscopically for traces of wear. All observations and measurements were systematically recorded according to the method described below. The second phase of the analysis focused on the relationship between the techno/morphological features and the edge usage.

Traditionally, techno/morphological properties of such collections receive considerable attention, but functional questions are often left unanswered. With microwear analysis, which examines edge usage, functional as well as morphological information can be obtained and systematically interrelated. The purpose of this analysis was to examine the assemblage for patterns of association between the pieces and their usage, which might reflect the human behaviour patterns exerted as certain tools were chosen (or rejected) to perform certain tasks.

The following is a brief outline of the data (variables and their values) recorded for each artifact:

- A. *Raw Material* Gravel flint, subdivided according to colour (brown, black, grey) and quality (vitreous versus slightly granular), and a general category of "flint" for those artifacts too burnt or patinated to define within other categories.
- B. *The Presence of Cortex* (0) absent, (1) present, or (2) present and covering more than half the surface.
- C. *Condition of the Piece* (0) not burnt, (1) burnt, (2) calcined, or (3) patinated.
- D. *General Morphology* (1) blade (here defined as a flake with parallel sides extending along the spine), (2) flake, or (3) fragment (pieces that were not struck, thermal fractures).
- E. *Length, Width, Thickness* Maximum dimensions measured in millimetres.
- F. *Spine-Plane Angles* Measured on each lateral side and on the distal end, if a spine allowed such measurement. Describes the angle at the point where the dorsal and ventral planes meet at an edge (Fig. 52).
- G. *Edge Angles* Measured at arbitrary points on right, left, and distal sides. The angle describes the very edge of a piece, and, therefore, measurements were taken with the aid of a microscope (Fig. 52).
- H. *Bulbs of Percussion* (0) none/not struck, (1) present, (2) deliberately truncated, or (3) broken accidentally.

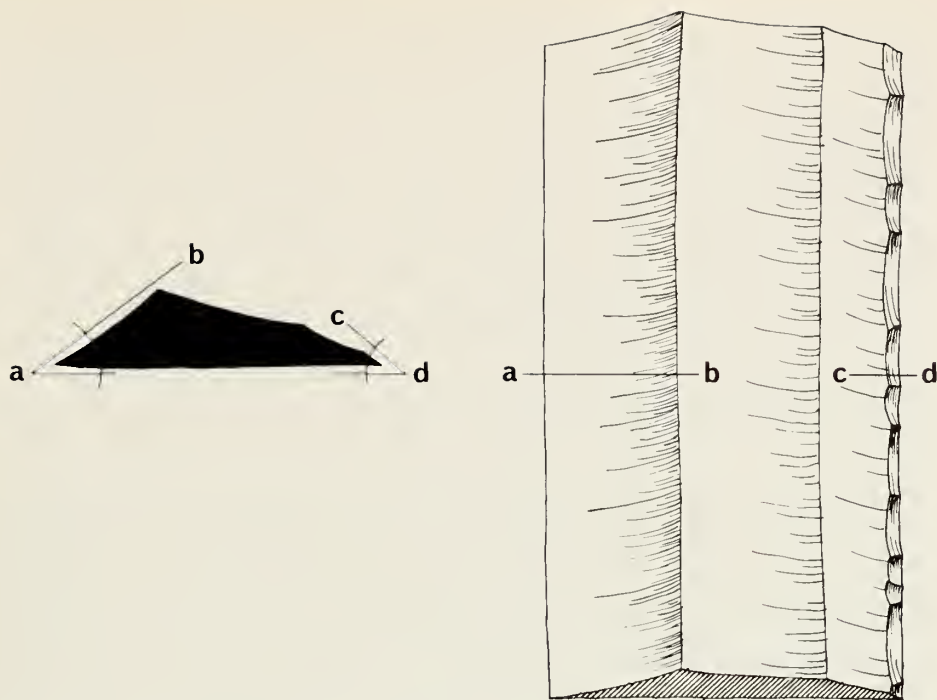


Fig. 52 Pit Y4 flint microwear study: measurement of the spine-plane and edge angles; a-b spine-plane angle; c-d edge angle (after Tringham et al. 1974:178).

- I. *Striking Platforms* (0) not struck, (1) unprepared, or (2) prepared.
- J. *Secondary Retouch* Presence/absence, as well as location (dorsal, ventral, or both surfaces); and type (abrupt or scalar).

The flints were also examined for traces of wear with a stereoscopic, binocular microscope (10×-50×). Pertinent data recorded in this phase of the analysis include the following:

- A. *Overall Edge Appearance* Extent of abrasion, battering, thickening, and so forth.
- B. *Polish* Presence/absence, degree.
- C. *Scratches* Presence/absence, direction in relation to edge.
- D. *Microscars* Presence/absence, size, shape, extent, location, definition of scar edges (well- to ill-defined).

The microwear data that was recorded had been gleaned from a series of experiments recently done at Harvard to test the formation of edge-damage on flints that results from their being used in different tasks (Tringham et al. 1974). Other experiments were recently completed to examine damage on retouched edges, also used in various ways and on various substances.

These latter tests were especially helpful in analyzing the pieces from Fengate. The experiments had included actions such as unidirectional cutting, scraping, sawing, butchering, and boring/piercing. Replication of the experiments showed that certain patterns of damage accompanied particular usages. The patterns themselves are composed of scars (left by the microflaking which occurs as the edge is pressured into or against the worked material), varying degrees of polish and abrasion, and in some instances, scratches. In the experiments with retouched flints, the degree and nature of abrasion were most indicative of the usage of the flint's retouched edge. When hard substances were worked, for example, the abrasion did not extend over the surface of the retouch scars as it did when wood was scraped or cut. The abrasion that resulted from working less resistant substances, such as meat, was only slightly damaging to the retouch scars, smoothing them over rather than wearing the scar edges away.

Action and worked material values were assigned to each edge examined in this study, on the basis of the damage configurations observed (or not found) on that edge, and with reference to the wear patterns discerned through the experimentation mentioned above.

The proper values for the above variables were recorded on 80-column data sheets, and were later keypunched on computer cards. The use of the computer allowed the variables to be compared and correlated for all units within the assemblage. Of the total 268 pieces examined, 83 were found to exhibit traces of wear (one piece, a hammerstone, is included in the total, but not in the number of used pieces discussed in this report). The breakdown of these 83 tools into groupings based on action and material is shown in Table 62. Some of the tools analyzed had been used in more than one of the actions, for example, to scrape with one edge and cut with another. Such tools were grouped together, for the purpose of analysis, according to the nature of the material they had worked. Again, the nature of the worked material was discerned by referring to the experimentation mentioned above. Although those experiments dealt with specific substances, such as meat, wood, and bone, worked material as presented here does not represent such specific substances. Rather, categories are used that reflect the properties of the worked material. Six such categories are referred to in this analysis. These include the least resistant, "soft" materials (for example, meat); medium to least resistant (for example, hide); medium to most resistant (for example, wood); most resistant, "hard" (for example, bone or antler); vegetable; and fleshy (meat with bone and fat, which produces a particular wear pattern that was identified in the experiments with retouched edges and is composed of a combination of step-scarring, and slight abrasion and polish).

In some cases, different edges of a tool showed evidence of having worked different materials (that is, one edge had been used on soft material, while the opposite had been used on medium-soft substances). This problem is similar to that encountered when different edges of the same piece reflected different modes of action. For some of the analyses done on this collection, it was necessary to collapse specific edge-use information, so

that the flint might be considered as a whole piece. Thus, as shown in Table 62, flints that had been used in two or more actions, or on two or more materials, were broken down into "worked medium-soft materials" and "worked medium-hard materials". Finally, one tool, with evidence of scraping and cutting both hard and fleshy materials, is categorized as "other" in those aspects of the analyses that treat whole pieces rather than edges.

The physical characteristics of the used flints were of importance. These characteristics include raw material, condition of the flint, treatment in manufacture, general morphology, and metrical attributes.

1. *Raw Material* Table 63 presents the results of an investigation of the relation between raw material and tool use. All pieces analysed (except for a hammerstone) were of flint, but four categories were discerned, based mainly on colour and texture/quality of the stone. These include black or brown vitreous flint, grey vitreous flint, slightly granular flint, and a category into which patinated or badly burnt flint was placed, when finer distinction was not possible. As noted in Table 63, no particular class of flint stands out as a preferred variety for any particular mode of use. Furthermore, used pieces do not differ in the percentages of chosen raw material from the unused pieces. The granular variety was not common in either group. The quantitative data help confirm the more general, visual observations which suggested that the flint assemblage was rather homogeneous in terms of quality of the raw material.
2. *Cortex Removal* Table 64 considers data on cortex removal and edge use. A greater percentage of unused flints versus used flints have cortex covering one half or more of the surface. Used flints with such an extent of cortex cover cluster in the scraping group, particularly in the category of scraping hard materials. Initially, this observation was considered as being indicative of preference for thicker, untrimmed tools for such a function. However, as the metric data will show, the tools that scraped hard materials do not show any such preferred thickness when compared to other tools. In a review of the problem, it was found that the edges of such scrapers had been trimmed, that is, the prevailing cortex occurred on surface areas, not on edges, from which its removal had been effected by secondary retouch.
3. *Condition of Flint* Although more than 50% of the flints analysed were not burnt, a fair percentage of the collection was found to be either calcined (15%) or patinated (20%). Except in a few extreme cases, microwear observations could be made on such pieces. As indicated in Table 65, the early tool users had not rejected patinated flints as functional pieces.
4. *General Morphology* The analysed flints were classified as either blades, fragments, or flakes. A blade, in this study, is defined as a flint flake having parallel sides running along the spine. Length/width ratios are not the major criterion for this class. Fragments are those pieces that bear no evidence of having been struck. Within the flake category, unused and

used flints maintained similar high frequencies (Table 66). A significantly smaller percentage of fragments was found among used flints *vis-à-vis* unused flints. This observation led to a review of the metrics of the fragments that had been used, including length, width, thickness, spine-plane angles, and edge angles. Table 67 gives the mean length, width, and thickness of each class of used flints, and as shown, the fragments do differ from blades in all three measurements, but not so much from flakes — average thickness is greater for the fragments. The mean thickness of unused fragments (Table 69) is similar to that of fragments that had been used. However, the unused fragments were considerably narrower, on the average, with a mean width approximating that of the used blades. It would seem that fragments were functional tools where the pieces had sufficient width corresponding to their thickness. In such cases, the fragments would then have been suitable for the scraping functions, which this morphological class most commonly performed. The thinner blades, on the other hand, with corresponding narrow widths, were most frequently used for cutting. More will be said about the metrics of the used flints and their functions later in this report.

Angle measurements for the three classes among the used flints are given in Table 68. They indicate that angles of the fragments were slightly greater than, and yet were not beyond, the angle measurements most frequently found among tools that had performed similar functions, that is, scraping.

In addition, used fragments had edges with angles that could be measured, while unused fragments had not. Table 70 shows the very low mean values of angles recorded for unused flints. These values basically reflect a considerable number of pieces whose angles could not be measured. Although unmeasurable angles were relatively common on distal ends of both unused and used pieces, even lateral edges of the unused flints could often not be well defined in quantitative terms. This fact suggests that the unused flints were often characterized by obtuse or ill-defined edge morphologies, which conceivably hindered edge usage. More will be said on angles later in this report.

5. *Treatment in Manufacture* A comparison was made of used and unused pieces in terms of the presence or absence of bulbs of percussion and treatment of striking platforms. As shown in Tables 71 and 72, the unused flints have a higher percentage of pieces that were either not struck (that is core fragments and thermal fractures) or not prepared before striking. Scrapers used on medium-hard and hard materials were more commonly not prepared or not struck, *vis-à-vis* tools that performed other tasks. Although the sample is small, this observation, along with the information on fragments presented above, may suggest that comparatively less preparatory treatment had gone into tools used in scraping tasks as opposed to those used in other tasks. However, as will be discussed further, the scraping tools apparently received more secondary modification than, for example, cutting tools.
6. *The Metrical Data* Table 73 gives the mean, standard deviation, and variance of length, width, and thickness of used and unused flints. One

notes in comparing the two groups that the degree of variance in thickness of the used flints is significantly less than that found among the unused flints. Unfortunately, with such a small sample, it is difficult to confirm that a conscious selection of certain thicknesses might have occurred when these tools were chosen for use. However, some degree of rejection of pieces too thick or too thin to be functional can be postulated.

The mean thickness of the used flints does not differ greatly from that of the unused flints, aside from the difference in variance. As can be seen in Table 73, however, used flints do differ significantly from unused pieces in their longer and wider mean values. This difference obtains even when the fairly high standard deviations of the means are taken into account.

The data in Table 74 give average metrics for the different functions. Again, since the sample is small and variance rather high, it is difficult to discern correlations between metrics and action and/or worked material. However, referring to measures of thickness, where variance is not so great, one does note that comparatively thinner flints had been used for cutting soft materials than for scraping them. The cutting tools, on the whole, are also generally longer and narrower than scraping tools.

Differences in width are perhaps better illustrated in the frequency diagram in Fig. 53. It will be recalled that this width difference was

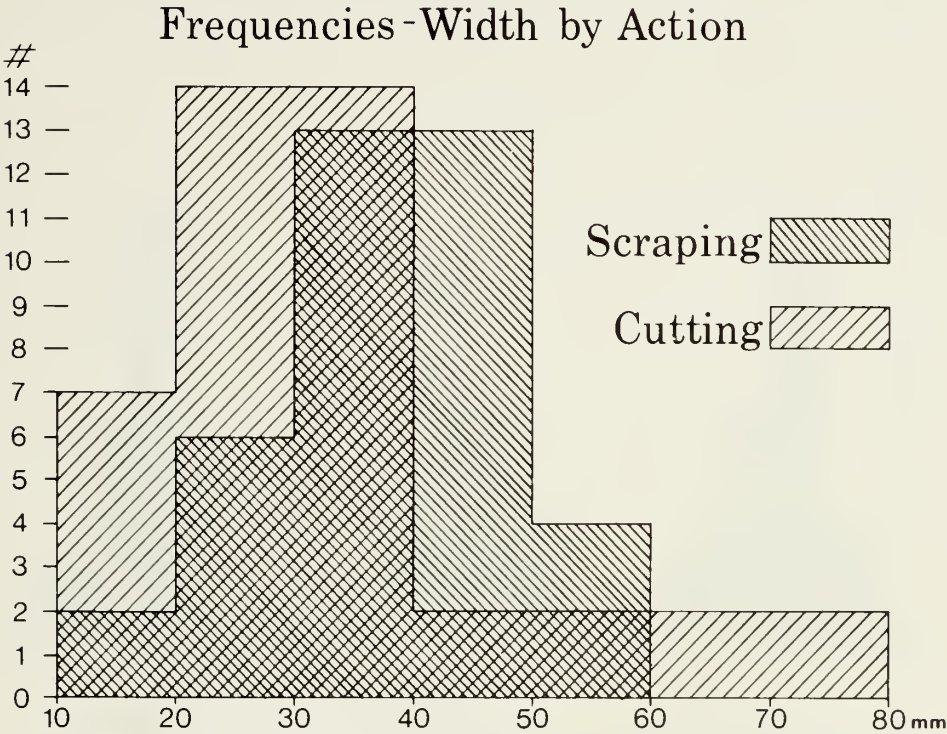


Fig. 53 Pit Y4 flint microwear study: histograms to show correlation of width and action.

suggested earlier, when the general morphological classes of the tools were discussed. It was then noted that two-thirds of the used blades had been used for cutting purposes and that the characteristic mean width, as well as thickness, of this class was considerably less than that of either the fragments or the flakes.

Finally, Fig. 54 shows a frequency diagram for the dimensions of the used flints. These preferred dimensions coincide with those noted at West Kennet and Durrington Walls (Smith 1965; Wainwright and Longworth 1971).

- Angle Measurements* Two types of angles were measured on each flint, namely, spine-plane angle and edge angle (Fig. 52). These were taken at arbitrary points on the right, left, and distal edges. Where lack of a spine or edge prohibited angle measurements, zeros were recorded. The spine-plane angles and edge angles of used and unused flints are presented in Table 75 and 76, respectively, grouped in 10-degree categories. These angles are also illustrated in the frequency charts, Fig. 55 and 56.

The spine-plane angle refers to the angle formed by the ventral and dorsal surfaces of a flint. In effect, it is a measure of the cross-section of the piece. The edge angle, on the other hand, measures the very edge of the piece, which had come into contact with the worked material.

Metrics:

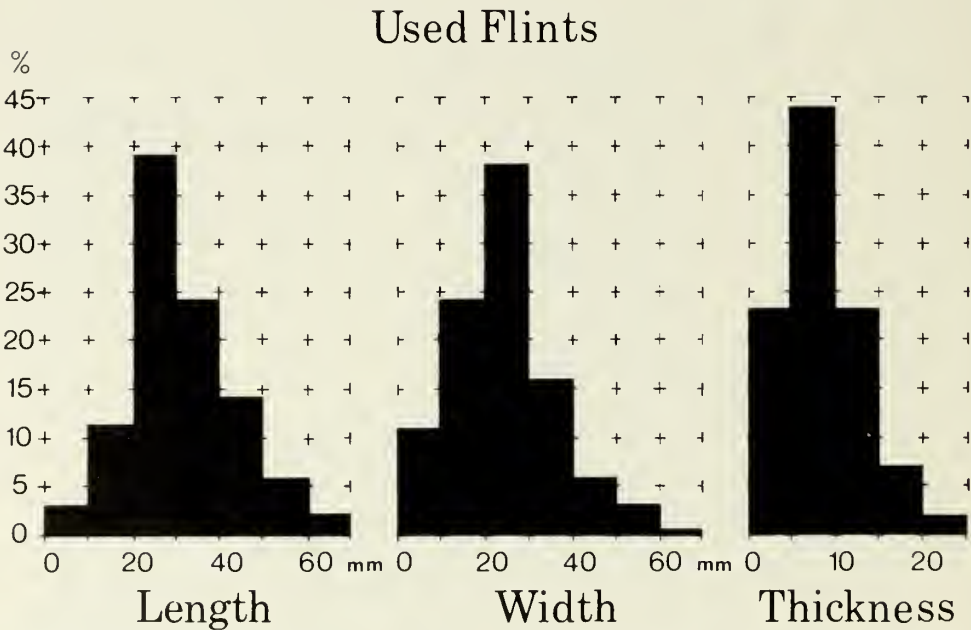


Fig. 54 Pit Y4 flint microwear study: histograms to show various measurements of used flints.

Unlike those of unused flints, the angles of the used flints do not spread over the values recorded, but rather show a more patterned distribution that centres about the 30° to 50° range. In addition, as mentioned earlier, the unused flints had more edges whose angles could not be measured, that is, fewer available working edges. This fact is clearly illustrated by the many "zeros" recorded for angle measurements among unused pieces. A relatively high percentage (37%) of distal ends on the used flints was also measured, but these did amount to a lesser number than those among unused flints.

The frequency tables for spine-plane angles indicate a preference for pieces with spine-plane angles in the 30° to 50° range. The frequency patterns for edge angles, Fig. 56, indicate that the peak values of edge angles on used flints (at 40° and 60°) appear to relate to scraping and cutting, with the former reflected in the larger angles. This range is also found among the distal edge angles, which group within the values found associated with scraping actions (60° to 80°). It would seem that edge angles reflect the nature of the worked material and action to some extent. This subject will be discussed further, when specific edge wear patterns are reviewed.

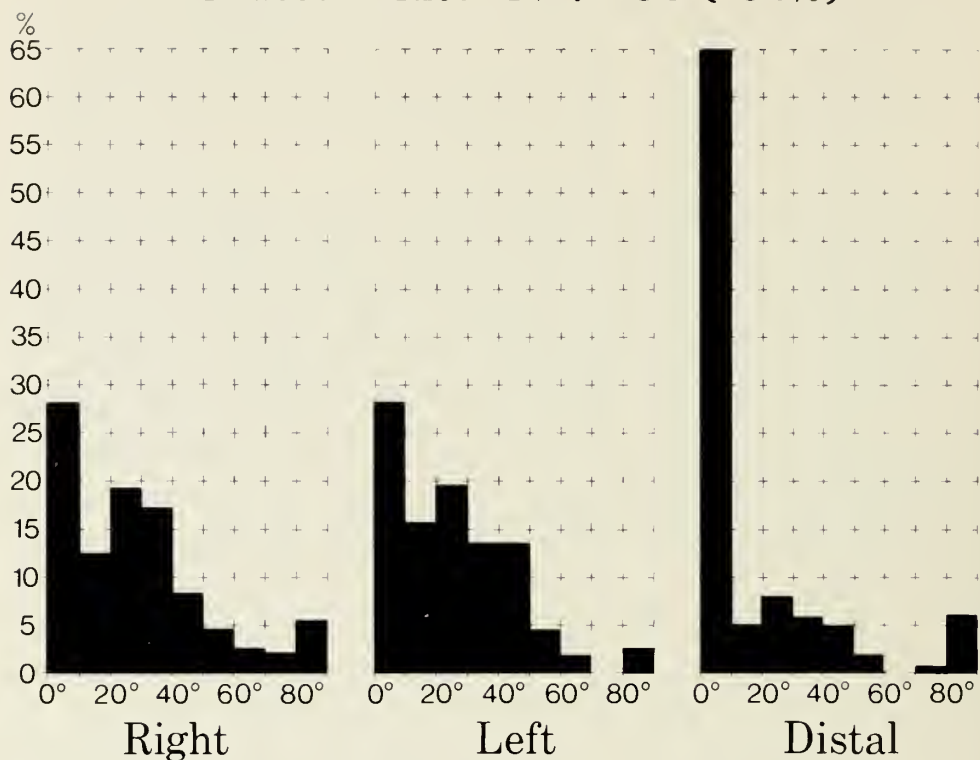
8. *Retouch Pattern* Before turning to edge wear, one more aspect of the used flints as tool units should be considered, namely, their retouch patterns (Table 77). The column headings are explained in the key to the table. As shown, 64% of the 83 used flints were retouched (includes broken flints with possible retouch). Only one retouched flint in the assemblage had no traces of wear. The unretouched pieces that do show wear are mainly those that were used for cutting soft materials.

Of the 53 used, retouched flints, 29 (55%) were retouched at only one coordinate area. Distal areas were the most frequently retouched. The distal edge was also frequently used; in addition, even when used lateral edges were not retouched (predominately when they had been used for cutting), the distal end was retouched. Retouch (as secondary modification of distal ends) is also reflected in the angle values of the used pieces; as noted earlier, however, distal angles were commonly difficult to measure because of edge morphology. Nonetheless, more than half of the used flints (63%) had distal edges that were measurable. The purpose of the secondary retouch common on distal ends could have been to produce a more workable edge. This applies especially to those pieces that had been used for scraping. As mentioned, tools that had served such functions frequently received only slight preparation in primary striking, but more secondary modification than tools that performed cutting tasks. Such modification was also done to remove cortex from edges.

9. *Used Edges* Table 78 was constructed to illustrate a hypothesis that arose during the microwear observations, namely, that the collection of used flints was characterized by minimal use of edges. As shown in Fig. 55 and 56, the angle ranges of the used flints do not suggest gross values that might render certain edges unusable. However, wear was found on limited areas of the tools. Only 36% of the sample had been used on two

Spine Plane Angles

Unused Flints - No. = 185 (100%)



Used Flints - No. = 83 (100%)

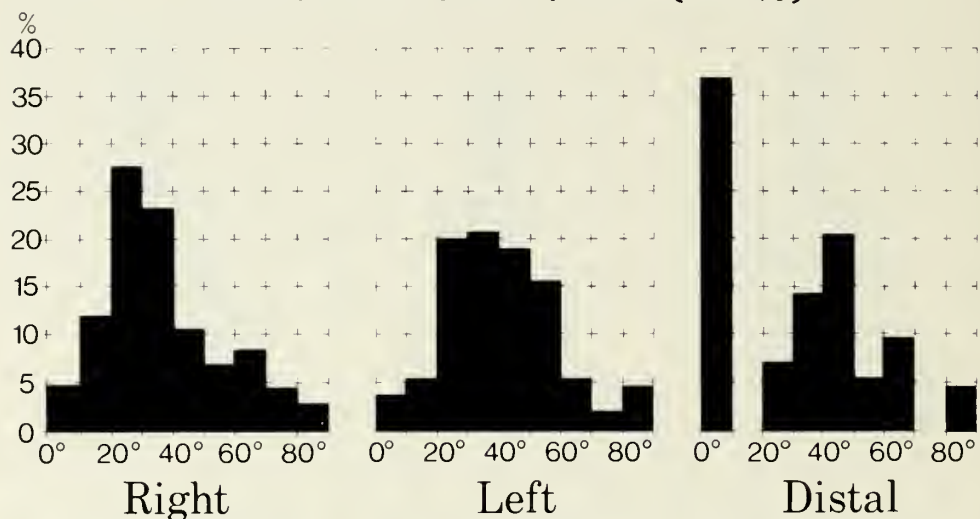
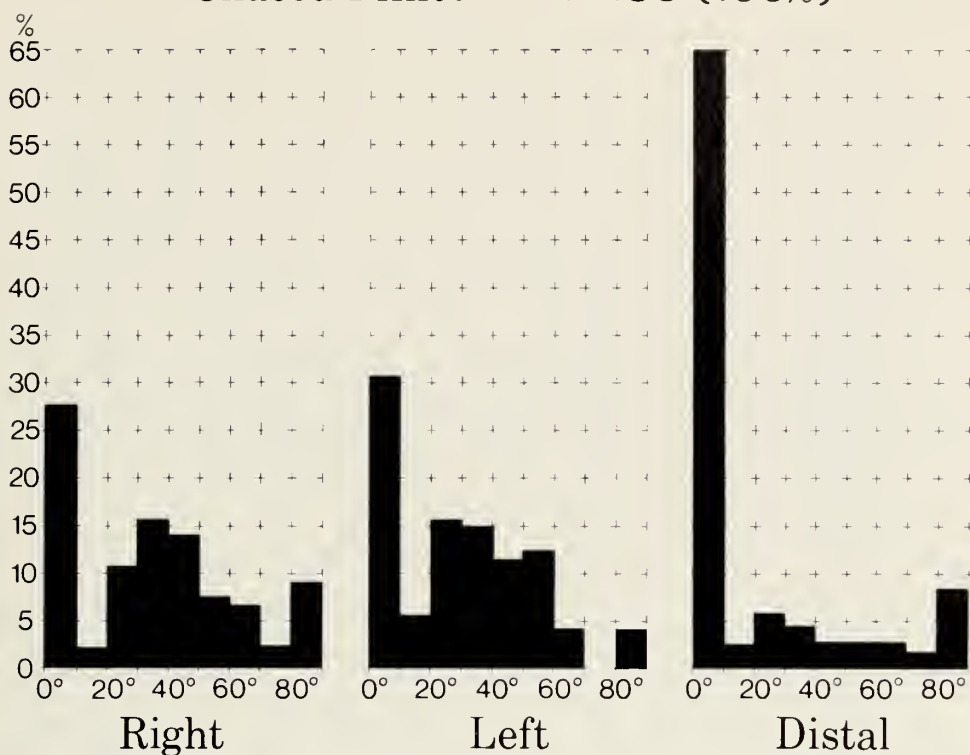


Fig. 55 Pit Y4 flint microwear study: histograms to show spine-plane angles of unused flints (upper) and used flints (lower).

Edge Angles

Unused Flints - No. = 185 (100%)



Used Flints - No. = 83 (100%)

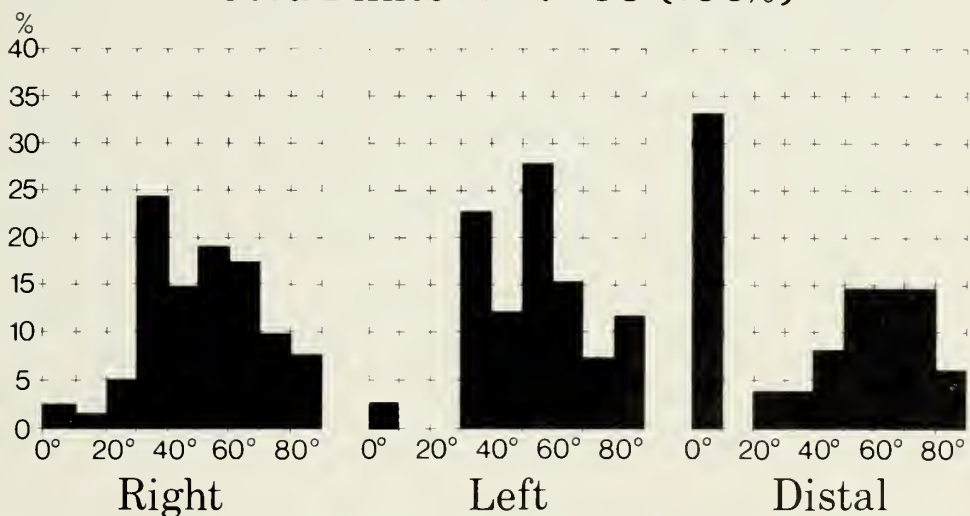


Fig. 56 Pit Y4 flint microwear study: histograms to show edge angles of unused flints (upper) and used flints (lower).

or more edges. This feature suggests that edge characteristics were important to the tool users. There follows here a review of these characteristics in more detail.

- (a) *Edge Uses* Table 79 shows the number of edges used, how they were used, and whether they were right, left, proximal, or distal. It is worth noting that right and distal edges were used in equal numbers.
- (b) *Edge Retouch* The relative frequency with which distal ends were used, especially for scraping, was noted earlier, when it was also suggested that these ends had been retouched to make them more functional. Table 80 supports this suggestion: 80% of distally retouched flints had been used on that edge, as opposed to 65% of retouched right and just 43% of retouched left edges. Only 14% of the few (7) retouched, proximal edges were used.

Table 81 shows that scraping medium to hard materials was the edge use most frequently associated with secondary retouch. In some cases, this secondary modification may have served to produce better angles for this task; other causes, such as cortex removal, however, are also possible. The sample is too small to allow further discussion on this point. It is, nonetheless, worth noting that retouched edges that were *not* used are also frequently found on tools that had been used for scraping on other faces. Finally, the number of edges used per tool was not great, which may suggest that the tasks themselves often involved the use of only one working edge.

- (c) *Edge Angles* We will now consider angle measurements associated with used edges. Table 82 shows that the spine-plane angles between 30° and 50° were selected, as noted above. Distal angles on used distal edges cluster within the higher range, 40° to 70°. The greatest number of rejected distal ends is found among pieces with unmeasurable angles, a feature already noted above, with reference to all unused flints. Another feature noted previously (Fig. 55) is that spine-plane angles, both right and left, show a slight mean difference: right-side angles are slightly less than left-side angles.

The relatively consistent selection of spine-plane angles for various tasks suggests that the spine angle is more important when selecting pieces of flint with which to perform a task, than when choosing actual edges to use for that task. In other words, the tool user took the spine-plane angle into account when he chose a piece of flint, but that angle did not dictate *how* he would use it.

Table 83 (edge-angle measurements) shows a clustering of values for each of the two major actions, cutting and scraping, which were found in this sample. The numbers are small and give only a suggestion of correlation between edge angles and edge use; it should also be recalled that the edge angle is very much a function of the edge use, as some tasks create a more obtuse angle than others.

To sum up, a few points deserve repeating. The metric analysis indicates that thickness *plus* width are factors in how a tool was used. Neither dimension should be considered alone when correlated with functions.

Further, analysis of blade and fragment functions suggests that blades, which were on average narrower and thinner, were mainly used for cutting and that fragments, which were wider and thicker, were used for scraping.

Spine-plane angles were probably important in the choice of a piece of flint to use as a tool, but probably not in the decision as to how to use that tool. Edge angles appear to correlate with patterns of use, but this is probably a result of the use itself, rather than the previous selection of a particular edge. The sample, however, is too small to make definitive statements about angles and functions. Other factors too, such as the material worked, should be taken into account when an attempt is made to relate angles and usage.

It was noted that edges may not have been retouched immediately prior to use, since some retouched edges remained unused; this observation applied to scrapers, the most heavily retouched type. Secondary retouch might also have served to remove cortex from working edges. In short, reasons for retouch are many and various, but, as with other attributes of a lithic tool assemblage, secondary retouch should always be examined with reference to the working edges. Until more is known about the functional attributes of lithic assemblages, little can be said about their cultural significance.

Table 62 Pit Y4 flint microwear study, summary table. See also Tables 63-83.

Total number of flints	268 (100%)						
Total number used	83 (31%)						
Total number unused	185 (69%)						
<i>Action (% of 83)</i>				<i>Material (%) = % of action</i>			
	Soft	Meduim soft	Medium hard	Hard	Other	Fleshy	Vegetable
Cutting 34, (41%)	16 (47%)	2 (6%)	9 (26%)	5 (15%)		2 (6%)	
Scraping 37, (44%)	6 (16%)	4 (11%)	11 (30%)	15 (41%)			1 (2%)
Boring 3, (4%)	2 (67%)	1 (33%)					
Working (combined actions) 9, (11%)		5 (56%)	3 (33%)		1 (11%)		
Total	24	12	23	20	1	2	1
% of total used	29%	15%	28%	24%	1%	2%	1%

Table 63 Pit Y4 flint microwear study: raw material, grouped by function

<i>Function</i>	<i>Raw material</i>			
	General (not distinct)	Black/brown vitreous	Grey vitreous	Granular
Boring soft (2)	1	1		
Boring medium soft (1)			1	
Cutting soft (16)	2	5	8	1
Cutting medium soft (2)		1	1	
Cutting medium hard (9)	2	3	4	
Cutting hard (5)	2	1	1	1
Cutting fleshy (2)		1	1	
Scraping soft (6)	1	4	1	
Scraping medium soft (4)	1	1	1	1
Scraping medium hard (11)	6	1	4	
Scraping hard (15)	6	5	4	
Scraping vegetable (1)		1		
Working medium soft (5)	1	2	2	
Working medium hard (3)	1	1	1	
Other (1)		1		
Total used (83)	23	28	29	3
% of total used	28%	34%	35%	3%
Total unused (185)	50	57	75	3
% of total unused	27%	31%	41%	1%
Final total (268)	73	85	104	6
% of final total	27%	32%	39%	2%

Table 64 Pit Y4 flint microwear study: cortex removal, grouped by function

<i>Function</i>	<i>Cortex removal</i>		
	No cortex	Cortex	Cortex on ½ surface or more
Boring soft (2)	1	1	
Boring medium soft (1)	1		
Cutting soft (16)	8	6	2
Cutting medium soft (2)	1	1	
Cutting medium hard (9)	4	4	1
Cutting hard (5)	2	2	1
Cutting fleshy (2)		2	
Scraping soft (6)	3	1	2
Scraping medium soft (4)	2	1	1
Scraping medium hard (11)	7	2	2
Scraping hard (15)	9		6
Scraping vegetable (1)			1
Working medium soft (5)	5		
Working medium hard (3)	2	1	
Other (1)		1	
Total used (83)	45	22	16
% of total used	54 %	27 %	19 %
Total unused (185)	101	36	48
% of total unused	55 %	19 %	26 %
Final total (268)	146	58	64
% of final total	54 %	22 %	24 %

Table 65 Pit Y4 flint microwear study: condition of flint, grouped by function

<i>Function</i>	<i>Condition</i>			
	Not burnt	Burnt	Calcined	Patinated
Boring soft (2)	1			1
Boring medium soft (1)	1			
Cutting soft (16)	10	1	2	3
Cutting medium soft (2)	2			
Cutting medium hard (9)	6		1	2
Cutting hard (5)	2		1	2
Cutting fleshy (2)	2			
Scraping soft (6)	3			3
Scraping medium soft (4)	3		1	
Scraping medium hard (11)	5		1	5
Scraping hard (15)	9	1	3	2
Scraping vegetable (1)	1			
Working medium soft (5)	4			1
Working medium hard (3)	2			1
Other (1)	1			
Total used (83)	52	2	9	20
% of total used	63%	2%	11%	24%
Total unused (185)	113	8	31	33
% of total unused	61%	4%	17%	18%
Final total (268)	165	10	40	53
% of final total	61%	4%	15%	20%

Table 66 Pit Y4 flint microwear study: class, grouped by function

<i>Function</i>	<i>Class</i>		
	Fragment	Blade	Flake
Boring soft (2)		1	1
Boring medium soft (1)			1
Cutting soft (16)		3	13
Cutting medium soft (2)		1	1
Cutting medium hard (9)	1	2	6
Cutting hard (5)	1		4
Cutting fleshy (2)		1	1
Scraping soft (6)	1	2	3
Scraping medium soft (4)	1		3
Scraping medium hard (11)	1		10
Scraping hard (15)	2	1	12
Scraping vegetable (1)			1
Working medium soft (5)		1	4
Working medium hard (3)			3
Other (1)			1
Total used (83)	7	12	64
% of total used	8%	15%	77%
Total unused (185)	51	5	129
% of total unused	27%	3%	70%
Final total (268)	58	17	193
% of final total	22%	6%	72%

Table 67 Pit Y4 flint microwear study: mean dimensions (mm) of used flints grouped by class

	Fragments (7)	Blades (12)	Flakes (64)
Mean length	39	44	39
Mean width	39	21	33
Mean thickness	13	8	9

Table 68 Pit Y4 flint microwear study: mean angles (degrees) of used flints grouped by class

	Fragments (7)	Blades (12)	Flakes (64)
Spine-plane angles			
Right	52	38	40
Left	56	42	45
Distal	28	23	35
Edge angles			
Right	77	47	57
Left	73	52	58
Distal	40	25	47

(Low mean values for distal angles reflect the lack of measurements for this edge, which caused zeros to be recorded.)

Table 69 Pit Y4 flint microwear study: mean dimensions (mm) of unused flints grouped by class

	Fragments (51)	Blades (5)	Flakes (129)
Mean length	30	30	26
Mean width	24	17	21
Mean thickness	12	5	6

Table 70 Pit Y4 flint microwear study: mean angles (degrees) of unused flints grouped by class

	Fragments (51)	Blades (5)	Flakes (129)
Spine-plane angles			
Right	15	30	35
Left	14	28	32
Distal	7	4	20
Edge angles			
Right	18	42	45
Left	16	44	38
Distal	9	6	23

(Low mean values for distal angles reflect to some extent the lack of measurements for this edge, which caused zeros to be recorded.)

Table 71 Pit Y4 flint microwear study: bulbs of percussion grouped by function

	Absent	Present	Truncated	Broken
Boring soft (2)		2		
Boring medium soft (1)				1
Cutting soft (16)		16		
Cutting medium soft (2)		2		
Cutting medium hard (9)	1	6	1	1
Cutting hard (5)	1	3		1
Cutting fleshy (2)		2		
Scraping soft (6)	1	5		
Scraping medium soft (4)	1	1		2
Scraping medium hard (11)	2	6	2	1
Scraping hard (15)	3	11		1
Scraping vegetable (1)		1		
Working medium soft (5)		3	1	1
Working medium hard (3)		3		
Other (1)		1		
Total used (83)	9	62	4	8
% of total used	11 %	75 %	5 %	9 %
Total unused (185)	60	104		21
% of total unused	32 %	56 %		12 %
Final total (268)	69	166	4	29
% of final total	26 %	62 %	1 %	11 %

Table 72 Pit Y4 flint microwear study: platform preparation, grouped by function

	Not struck	Not prepared	Prepared	Broken
Boring soft (2)			2	
Boring medium soft (1)				1
Cutting soft (16)		7	9	
Cutting medium soft (2)			2	
Cutting medium hard (9)	1	2	4	2
Cutting hard (5)	1	1	2	1
Cutting fleshy (2)		1	1	
Scraping soft (6)	1	2	3	
Scraping medium soft (4)	1	1		2
Scraping medium hard (11)	2	4	2	3
Scraping hard (15)	3	9	2	1
Scraping vegetable (1)			1	
Working medium soft (5)		1	2	2
Working medium hard (3)			3	
Other (1)			1	
Total used (83)	9	28	34	12
% of total used	11 %	34 %	41 %	14 %
Total unused (185)	61	87	17	20
% of total unused	33 %	47 %	9 %	11 %
Final total (268)	70	115	51	32
% of final total	26 %	43 %	19 %	12 %

Table 73 Pit Y4 flint microwear study: mean dimensions (mm)

	Mean	Standard deviation	Variance
Used flints (83)			
Length	40	11.3	127.5
Width	32	10.9	119.7
Thickness	9	9.4	19.3
Unused flints (185)			
Length	27	11.3	127.6
Width	22	10.8	117.7
Thickness	8	7.2	51.6

Table 74 Pit Y4 flint microwear study: average dimensions (mm), grouped by function

	Length	Width	Thickness
Boring soft (2)	27	20	5
Boring medium soft (1)	22	15	5
Cutting soft (16)	41	23	7
Cutting medium soft (2)	48	31	6
Cutting medium hard (9)	40	32	9
Cutting hard (5)	41	40	11
Cutting fleshy (2)	41	27	12
Scraping soft (6)	40	33	12
Scraping medium soft (4)	32	38	9
Scraping medium hard (11)	40	37	10
Scraping hard (15)	41	37	10
Scraping vegetable (1)	35	27	7
Working medium soft (5)	45	28	8
Working medium hard (3)	40	30	6
Other (1)	58	30	14

Table 76 Pit Y4 flint microwear study: angles, unused flints (total no. 185, 100%)

	0°-9°	10°-29°	30°-39°	40°-49°	50°-59°	60°-69°	70°-79°	80°-89°	90°+
Spine-plane									
Right no.	53	25	36	34	14	7	4	2	10
%	28.8	13.0	19.6	18.5	7.6	3.8	2.2	1.1	5.4
Left no.	57	24	38	25	25	8	3	0	5
%	31.0	12.5	20.7	13.6	13.6	4.4	1.6		2.7
Distal no.	122	11	14	11	9	6	0	2	11
%	66.3	5.4	7.6	6.0	4.9	2.7		1.1	6.0
Edge									
Right no.	53	6	20	32	27	13	12	5	17
%	28.8	2.7	10.9	17.4	14.7	7.1	6.5	2.7	9.2
Left no.	57	10	29	27	22	23	8	1	8
%	31.0	4.9	15.8	14.7	12.0	12.5	4.4	.5	4.4
Distal no.	123	6	11	10	6	6	5	3	15
%	66.3	3.3	6.0	5.4	3.3	3.3	2.7	1.6	8.2
<i>Mean values</i>									
Right spine-plane angle 29.2°									
Left spine-plane angle 27.1°									
Distal spine-plane angle 16.1°									
Right edge angle 37.4°									
Left edge angle 32.4°									
Distal edge angle 18.8°									

Table 77 Pit Y4 flint microwear study: used flints, retouch patterns

	1111	1112	3112	1110	0110	0210	1010	0101	1180	2100
Boring soft										
Cutting medium hard					1					1
Cutting fleshy			1				1			
Scraping soft				1						
Scraping medium soft				1	1					
Scraping medium hard	1			1	1		2			
Scraping hard		1		3	1		2		1	
Working medium soft				1				1		
Working medium hard							1			
Other						1				
Total flints	1	1	1	7	4	1	6	1	1	1
Pattern totals		3		7					14	

	1000	0100	0010	0001	0200	0020	1888	0081	0080	0008
Boring medium soft										
Cutting soft			1	1	1					1
Cutting medium soft					1				1	
Cutting medium hard			1					1		
Cutting hard	2		2	1						
Scraping soft			1							
Scraping medium soft		1	1							
Scraping medium hard			3			1				
Scraping hard	2		3							
Working medium hard									1	
Total flints	4	1	12	2	2	1	1	1	2	1
Pattern total										

Total retouched	53, 64% of total used
Total not retouched	30, 36% of total used
Boring soft	2
Cutting soft	13
Cutting medium hard	5
Scraping soft	4
Scraping medium hard	2
Scraping hard	2
Working medium hard	2

Key to column headings: first digit = retouch on right side; second digit = retouch on left side; third digit = retouch on distal end; fourth digit = retouch on proximal end. Values: 0 = no retouch; 1 = dorsal retouch; 2 = ventral retouch (located on ventral surfaces); 3 = retouched on both surfaces; 8 = broken/don't know.

Table 79 Pit Y4 flint microwear study: function — number of edges used

Edge	Function -- number of edges used							
	Boring soft	Boring medium soft	Cutting soft	Cutting medium soft	Cutting medium hard	Cutting hard	Cutting fleshy	
Right	0	0	9	4	7	1	1	
Left	0	0	7	5	7	3	1	
Distal	1	3	0	0	4	3	0	
Proximal	1	0	0	0	0	0	0	
Totals	2	3	16	9	18	7	2	
Right	3	0	9	6	0	1		
Left	2	1	3	6	0	0		
Distal	4	6	8	11	1	0		
Proximal	0	0	0	0	0	0		
Totals	9	7	20	23	1	1		
Total right edges	Used 41	Total left edges		Used 35				
	Unknown 2			Unknown 2				
	Broken 0			Broken 0				
	Unused 40			Unused 46				
				83	83			
Total distal edges	Used 41	Total proximal edges		Used 1				
	Unknown 2			Unknown 2				
	Broken 5			Broken 7				
	Unused 35			Unused 73				
				83	83			

Table 80 Pit Y4 flint microwear study: location of retouched and used edges

<i>Retouched edges (no.)</i>		<i>Used edges (no.)</i>		
	Right (41)	Left (35)	Distal (41)	Proximal (1)
Right (23)	15	9	15	1
Left (21)	11	9	14	1
Distal (36)	16	13	29	1
Proximal (7)	3	4	3	1

Table 81 Pit Y4 flint microwear study: retouch and edge use of used flints

Use of edge	No. of edges retouched	No. of edges not retouched	No. of edges not used but retouched
Cutting soft	0	16	2
Cutting medium soft (40%)	2	7	4
Cutting medium hard (42%)	4	14	10
Cutting hard (40%)	2	5	3
Cutting fleshy	1	1	0
Scraping soft (40%)	2	7	4
Scraping medium soft (100%)	6	1	7
Scraping medium hard (65%)	15	5	13
Scraping hard (96%)	19	4	22
Scraping fleshy	1	0	0
Scraping vegetable	0	1	0
(Percentages are portion of total number of edges used in this manner.)			

Table 82 Pit Y4 flint microwear study: spine-plane angles (degrees), grouped by function

	Right angle									Left angle									Distal angle								
	00	20	30	40	50	60	70	80	90	00	20	30	40	50	60	70	80	90	00	20	30	40	50	60	70	80	90
Number	3	8	25	21	8	5	6	3	2	2	4	17	19	16	13	4	2	4	24		6	12	17	5	8	1	3
Not used	3	2	8	12	4	4	4	1	2	1	3	9	7	8	9	3	2	4	19		2	7	3	1	1	1	1
Used	0	6	17	9	4	1	2	2	0	1	1	8	12	8	4	1	0	0	5		4	5	14	4	7	0	2
Cutting soft	2	4	2	1								1	2	3	1												
Cutting medium soft			4									1	3		1												
Cutting medium hard	2	3	2									3	3	1					2				1		1		
Cutting hard			1							1			2						1								
Cutting fleshy								1					1														
Scraping soft			1		1	1								2							1	1				2	
Scraping medium soft													1											5	1		
Scraping medium hard	2	4	2	1						1	1				1				1			1	4	1	1		
Scraping hard								2	1			1	1	2	1	1						2	2	2	3		2
Scraping fleshy																					1						
Scraping vegetable			1																								
Boring soft																			1								
Boring medium soft																			1		2						

(Broken and unknown edges make up the balance of edges.)

(Broken and unknown edges make up the balance of edges.)

Appendix 10

A Reinterpretation of the Late Neolithic Site at Playden, East Sussex

Richard Bradley

The Fengate excavation offers a useful opportunity to reconsider the one published Late Neolithic occupation site with which it might have features in common.

Playden lies to the north of Rye in East Sussex (TQ 921226) and within a kilometre of the edge of Romney Marsh, an environment not dissimilar to the Fen Margin. The site occupied a low knoll of ill-drained clay. Before excavation, it probably appeared as a flattened mound, perhaps damaged by cultivation (Cheyney 1935). It lay close to a number of springs and it is possible, from surface survey, that other earthworks had once existed on the site.

The site had three elements: a ring-ditch 19.8 m in diameter with a number of internal features, a linear gully respecting the position of this earthwork, and a small rectangular ditched enclosure with an internal palisade. The latter overlapped the linear gully, but their stratigraphical relationship was not recorded. Only the ring-ditch was completely cleared, and the limits of excavation do not appear on the site plan (Fig. 57). There was also evidence of an earlier, Mesolithic, occupation on the site, which will not be considered here.

The ring-ditch was unbroken and had an average width of 1.5 m and depth of 0.75 m. None of the excavated spoil seems to have refilled the ditch as silt. Within the enclosure, the main features were three elongated hollows in the clay subsoil. One of these included a packing of sandstone blocks. These hollows were filled with a white sand layer which also composed the main — and primary — filling of the ring-ditch, and covered much of the internal area to a depth of 0.23 m. There is no record of a buried soil. The bottom of the ring-ditch included fragments of burnt timbers, some up to 0.15 m thick and 1.8 m long, together with a triangular arrowhead and parts of one pot. Within the enclosed area were several patches of wood ash sealed by the white sand, while flint flakes, wood ash, and the remains of another pot were found within the internal hollows. Clay “daub” may also have been found in the ditch, but this is not definitely provenanced.

The white sand occurs in pockets within the natural clay over the site, but there is no evidence that it was excavated from any of the features already described, and it must, therefore, have been introduced. Within the ring-ditch this layer includes pieces of charcoal, burnt stone, and six flint cores, but the only items in the ditch filling itself were flecks of charcoal. In the central part of the ring-ditch enclosure this sand layer was overlain by patches of sandstone blocks, according to the excavator “three small pavements or parts of a partially destroyed pavement”. From the published section it is evident that these overlay the subsoil hollows, but were separated from them by the sterile sand. There were also signs of similar

*PREHISTORIC SITE AT
MOCKBEGGAR, PLAYDEN.*

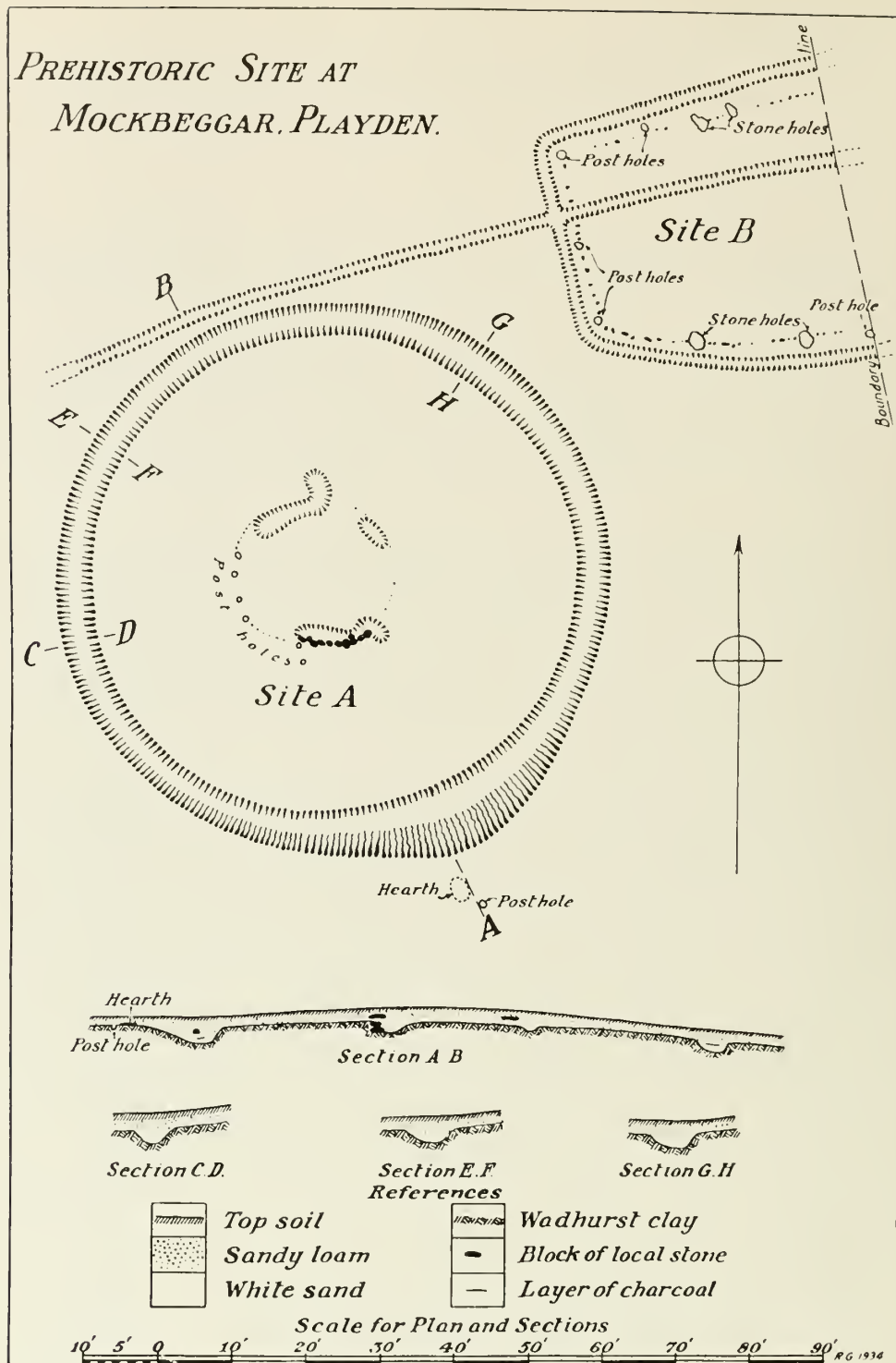


Fig. 57 General plan of the site at Playden Sussex (from Cheyney 1935).

material over the ring-ditch. With these blocks were a number of worked flints. According to the report, four possible post-holes, 0.30 m in diameter, were cut through the sand layer into the natural clay. Their filling is recorded as "yellow clay", and their precise place in any sequence is unclear. Six such post-holes appear in the published plan, in an arc between two of the hollows (Fig. 57).

The whole area was finally sealed by a disturbed sandy loam, which also formed the uppermost filling of the ring-ditch, where it produced quantities of charcoal, burnt stone, worked flints, and pottery; it also included extensive areas of burning. Over the area enclosed by the ring ditch, where this layer was thinner, it had been badly disturbed; alongside similar prehistoric material, medieval pottery and iron slag were also found. In this area, the excavator referred to "numerous fragments of ferruginous sandstone . . . so numerous that every spadeful brought up several". It is tempting to regard this layer as a disturbed ploughsoil, and the stone fragments as displaced parts of the excavator's "sandstone pavement".

In a note appended to the report, Curwen put forward the following interpretation. He regarded the ring-ditch as a living site with a timber hut at its centre. He suggested that the clay knoll may have been too cold and damp for its occupants, and that they therefore took the trouble of equipping themselves with "a new floor of white sand over the greater part of the area within the ditch, and the reconstruction of the hut above the sand". It is this view that I wish to reconsider.

At least four of the post-holes seem to have cut the overlying sand, and so their inclusion in this "hut" is strictly inadmissible. But all three of the internal hollows were open when this layer was put down. One was lined with stone packing, although no post sockets were recognized. On the base of the ditch, also sealed by white sand, the excavator recognized timbers which he considered might be "the timbers of a hut or huts destroyed by fire". It is suggested that the form of the hollows could well have resulted from the deliberate digging out of groups of standing posts. These hollows and the ditch must be contemporary on stratigraphic evidence, and so one phase of demolition or clearance might be envisaged.

The addition of a "floor" of white sand gives far more difficulty. Some estimates of the amount of sand introduced to the site can be made on the basis of the published section and details in the text.

Volume of sand enclosed by the ring-ditch	7 m ³
Volume of sand filling the ditch	34 m ³
Volume of sand filling the internal hollows	0.7 m ³
Total	41.7 m ³

If the sand represented a "floor" in a hut it would have had a thickness of about 1.4 m. Even if this material had been spread originally over the whole area indicated in the section, the hypothetical thickness would still be about 0.40 m.

The suggestion, rather, that a post structure was replaced by a mound is advanced by the fact that the arc of post-holes cutting through the sand

could have formed part of a revetment to such a mound. Also, the patches of stone blocks, shown in section over the site of the "hut", might have served a related function. At the same time, the report strongly suggests that in the upper levels ploughing may have disturbed a substantial rubble capping. The whole matter cannot be resolved satisfactorily, but one feasible interpretation is that a domestic structure was replaced by a barrow of considerable size. With the hypothetical loss of the upper part of the mound, the absence of a burial cannot be taken at face value, least of all on an acid subsoil. In this context, the introduction of white sand could have been a deliberate element of design, paralleled quite closely by a Beaker barrow in the nearby Weald (Beckensall 1967). The nature of the secondary occupation is unknown.

This ring-ditch was only part of a larger complex. The linear gully which skirted it ran out beyond both limits of excavation, while a trial trench produced an isolated hearth and a single post-hole. These included a few burnt stones and worked flints. The rectangular enclosure, too, lay partly outside the excavated area and cannot be related to any sequence. The only finds were a few worked flints.

Like the linear boundary, the gully of the rectangular enclosure was only 0.60 m wide and 0.30 m deep. It was accompanied on the inside by a line of stake-holes, with larger holes at intervals of about 3.6 m. The fact that these stakes had leaned outward in section might indicate that they had partly revetted a low internal bank. No features were found within the enclosure and its similarity to those at Fengate (Feature Division 1) will be readily apparent.

It is probable that these features may be regarded as broadly contemporary. The only datable items come from the ring-ditch. It is unfortunate that only the stratification of the pottery is recorded. This pottery has been the subject of some debate (Hawkes 1935), but the similarity of one vessel (A1) from the bottom of the ditch to domestic pottery of the Southern British Beaker series now takes support from a radiocarbon date of 1740 ± 115 bc (BM-450) for charcoal from a similar position. The material as a whole resembles "plain Grooved Ware" from the Yorkshire Wolds (Manby 1974). The published flints are compatible with this solution. There appears to be no basis for assigning a first millennium B.C. date (cf. Ritchie 1970:64).

The presence of a utilitarian rectangular enclosure at such a second millennium B.C. date should no longer occasion any surprise, and I have already discussed some other possible examples in Britain (Bradley 1970:467; Bradley and Ellison 1975:160-61). Recent excavations, published and unpublished, are equally establishing a continuum of palisaded enclosures throughout the second millennium B.C. Important published sites are Broome Heath, with a radiocarbon date for the top of the old land surface of 2217 ± 78 bc (BM-755) (Wainwright 1972); Lockerbie, which is probably associated with a Grooved Ware occupation (Cormack 1964); Cullyhanna Lough, with radiocarbon dates of 1525 ± 75 bc, and 1355 ± 50 bc for timbers from a stockaded enclosure (Hillam 1976; Hodges 1958); and Shearplace Hill with an early palisaded phase associated with Wessex Biconical Urns (Rhatz and ApSimon 1962:299). The view that the Playden ring-ditch might exhibit

a sequence from a possible domestic site to a barrow equally matches earlier suggestions of Case (1963).

The main interest of this poorly recorded site lies of course in its partial resemblance to Fengate, but there are some slight hints of its own place in the contemporary settlement pattern. No faunal remains have survived the acid soil, but a saddle quern came from the surface layer over the ring-ditch. The flints of the primary occupation came from beach deposits near the site, but those in later layers were gathered from the chalk, at least 20 kilometres away. Given the ready accessibility of a much nearer source of flint, the sporadic movement of some, or all, of the occupants may be one explanation. Case (1963) has suggested that some ring-ditches may have been used in summer grazing of seasonally flooded land, and their resemblance to recorded stack stands is not without interest (cf. R.C.H.M. 1970:56.6 and Lomas 1962). The nearby Romney Marsh might indeed have provided one such intermittently available zone. The presence of a quern is no argument against seasonal occupation, since winter sowing seems to have been mainly an Iron Age innovation. Certainly the proportion of scrapers to other implements is fully 9:1, a ratio far wider than that on more substantial Neolithic settlements. Such a pattern appears to be characteristic of a number of "marginal" areas used in this period, but a full interpretation must await a site with better primary data (cf. Holden and Bradley 1975).

Appendix 11

Concordance List of Field and Publication Area Numbers

As dug (all finds marked thus)

FNG 71 Area I
FNG 71 Area II
FNG 71 Area III
FNG 71 Area IV
FNG 71 Area V
FNG 71 Area VI
FNG 71 Area VII
FNG 71 Area VIII
FNG 71 Area IX
FNG 71 Area X
FNG 71 Area R
FNG 71 Area XI
FNG 72 Area I
FNG 72 Area II
FNG 72 Area III
FNG 72 Area IV
FNG 72 Area V
FNG 72 Area VI
FNG 72 Area VII
FNG 72 Area VIII
FNG 73 and 74 require no changes

As published

Padholme Road subsite, Area I
Padholme Road subsite, Area II
Padholme Road subsite, Area III
Padholme Road subsite, Area IV
Padholme Road subsite, Area V
Padholme Road subsite, Area VI
Padholme Road subsite, Area VII
Padholme Road subsite, Area VIII
Padholme Road subsite, Area IX
Padholme Road subsite, Area X
Storey's Bar Road subsite, Area II
Storey's Bar Road subsite, Area III
Padholme Road subsite, Area XI
Padholme Road subsite, Area XII
Padholme Road subsite, Area XIII
Padholme Road subsite, Area XIII
Newark Road subsite, Area I
Vicarage Farm subsite, Area I
Vicarage Farm subsite, Area II
Storey's Bar Road subsite, Area IV

Appendix 12

Details of Small Features of Feature Division 7 not Described in the Text

Note For location see Fig. 32. All measurements are in centimetres.

Number	Length	Breadth	Dia.	Depth	Grid Ref.	Remarks
B5			20	21	3/20	Circular, (?) post-hole
B7	105	20		34	15/33	Section drawn Fig. 33
B8			26	13	9/14	Circular, (?) post-hole
B9			20	14	3/20	Circular, (?) post-hole
B10			20	16	3/22	Circular, (?) post-hole
B11	23	10		8	3/23	
B13	117	65		21	10/0	Section drawn Fig. 33
B14			16	19	2/22	Circular post-hole
B18			30	10	13/2	Circular, (?) post-hole
B19			40	27	14/3	Circular post-hole cut into B13
B20			25	10	17/4	Circular, (?) post-hole
B22	73	40		36	11/16	
B23	57	40		22	12/15	
B29			47	11	22/13	Circular
B32			46	14	19/11	Circular
B37	530	80		35	15/33	Section drawn Fig. 33
B39	50	20		13	23/31	Possibly natural
B40	160	72		22	15/35	
B41			50	16	25/52	Circular
B42			34	10	17/26	Circular
B45			60	8	23/26	Circular
B46			30	7	24/26	Circular
B47			50	10	25/21	Circular
B48			28	17	12/43	Circular
B51			33	11	23/36	Circular
B52			35	30	23/34	Circular, (?) post-hole
B53			38	5	24/33	Circular, (?) post-hole
B54			27	11	25/33	Circular, (?) post-hole
B55			20	11	26/33	Circular, (?) post-hole
B56			20	7	26/32	Circular, (?) post-hole
B57			32	18	27/32	Circular, (?) post-hole
B58			27	14	24/40	Circular, (?) post-hole
B59			26	19	25/41	Circular, (?) post-hole
B60			30	22	0/15	Circular, (?) post-hole
B62			26	18	25/42	Circular, (?) post-hole

Appendix 13

Radiocarbon Dates

The radiocarbon determinations relate to material discussed in this and *The First Report*. Dates are given using the 5568 year half-life for carbon-14, as recommended in the journal *Radiocarbon*, and $\pm$ figures are to one standard deviation. With the exception of UB-822, all samples were collected from Areas I to V of the Storey's Bar Road subsite in 1973 and 1974.

- HAR-397 Charcoal, 3980 ± 100 bp (ca 2030 bc). From small pit B24 (Fig. 32 and 33) containing Grooved Ware. Sample size adequate and date acceptable.
- HAR-398 Wood, 3000 ± 70 bp (ca 1050 bc). Twigs from collapsed lining of well B3 layer 5 (Fig. 16 and 17). Sample size adequate; date provides possible *terminus ante quem* for the settlement described in this report.
- HAR-399 Charcoal, 3970 ± 70 bp (ca 2020 bc). From small pit B61 (Fig. 32 and 33) containing Grooved Ware. Sample size adequate and date acceptable.
- HAR-400 Charcoal, 3410 ± 120 bp (ca 1460 bc). Contents of Secondary Series Collared Urn (Fig. 41: 26a and b). Sample size adequate and date acceptable.
- HAR-401 Charcoal, 3960 ± 90 bp (ca 2010 bc). From pit Y4, layer 1, containing Grooved Ware and flints discussed in Appendix 9 (Fig. 20). Sample size adequate and date acceptable.
- HAR-404 Charcoal, 3880 ± 80 bp (ca 1930 bc). From small pit Y12 containing Grooved Ware (Fig. 35 and 36). Sample size adequate and date acceptable.
- HAR-406 Wood, 3290 ± 80 bp (ca 1340 bc). From small stake (Dia. 3 cm) driven into gravel bottom of pit W17, and protruding into layer 5. Sample size adequate and date acceptable.
- HAR-407 Wood, 2670 ± 90 bp (ca 720 bc). Sample of young twigs from pit W17, layer 5, D. 1.35 m. Provenience same as HAR-786. Sample size adequate and date acceptable.
- HAR-409 Charcoal, 3810 ± 150 bp (ca 1860 bc). From small pit W32 containing Grooved Ware (Fig. 31 and 33). Sample size adequate and date acceptable.
- HAR-770 Charcoal, 4460 ± 130 bp (ca 2510 bc). From small pit P10 containing flints of later Neolithic type (Fig. 36). Harwell reports "sample size below that normally required for optimum statistics". Date somewhat earlier than expected.
- HAR-771 Charcoal, 3960 ± 70 bp (ca 2010 bc). From small pit P59 containing Grooved Ware (Fig. 36). Sample size adequate and date acceptable.

- HAR-786 Wood, 2800 ± 80 bp (ca 850 bc). Sample of young twigs from pit W17, layer 5, D. 1.35 m. Provenience same as HAR-407. Sample size adequate and date acceptable.
- UB-822 Wood, 2290 ± 125 bp (ca 340 bc). From Vicarage Farm subsite, Area I, feature 6, layer 4 (FNG 1:fig. 12 and 13). Early Iron Age rock-cut pit which extended into the water table. Sample of young twigs taken around vessel shown in FNG 1:fig. 14:3. Sample size adequate and date acceptable, if somewhat recent.

Bibliography

ABBOTT, G. W.

- 1910 "The discovery of prehistoric pits at Peterborough", *Archaeologia*, 62, pp. 333-52.

ARTIS, E. T.

- 1828 *The Durobrivae of Antonius, identified and illustrated.*

ATKINSON, R. J. C., C. M. PIGGOTT and N. K. SANDARS

- 1951 *Excavations at Dorchester, Oxon. First report.* Ashmolean Museum, Oxford.

BECKENSALL, S.

- 1967 "The excavation of Money Mound", *Sussex Archaeological Collections*, 105, pp. 13-30.

BRADLEY, R. J.

- 1970 "The excavation of a Beaker settlement at Belle Tout, East Sussex, England", *Proceedings of the Prehistoric Society*, 36, pp. 312-79.

BRADLEY, R. J. and A. ELLISON

- 1975 *Ram's Hill: a Bronze Age defended enclosure and its landscape*, British Archaeological Reports, 19. Oxford.

CASE, H. J.

- 1963 "Notes on the finds (from Stanton Harcourt) and on ring ditches in the Oxford region", *Oxoniensia*, 28, pp. 19-53.

- 1969a "A ritual site in north-east Ireland". In *Megalithic graves and ritual: papers presented at Atlantic Colloquium III, Moesgård*. Jutland Archaeological Society.

- 1969b "Neolithic explanations", *Antiquity*, 43, pp. 176-86.

CHANG, K. C., ed.

- 1968 *Settlement archaeology*. National Press Books, Palo Alto, California.

CHEYNEY, H. J.

- 1935 "An Aeneolithic occupation site at Playden, near Rye", *Antiquaries Journal*, 15, pp. 152-64.

CHURCHILL, D. M.

- 1970 "Post-Neolithic to Romano-British sedimentation in the southern Fenlands of Cambridgeshire and Norfolk". In C. W. Phillips, 1970, pp. 132-46.

CLARK, J. G. D.

- 1934 "Derivative forms of the *petit tranchet* in Britain", *Archaeological Journal*, 91, pp. 32-58.

- 1948 "The development of fishing in prehistoric Europe", *Antiquaries Journal*, 28, pp. 45-85.

- 1960 "Excavations at the prehistoric site at Hurst Fen, Mildenhall, Suffolk, 1954, 1957 and 1958", *Proceedings of the Prehistoric Society*, 26, pp. 202-45.

CLARK, J. G. D. and H. GODWIN

- 1962 "The Neolithic in the Cambridgeshire Fens", *Antiquity*, 36, pp. 10-22.

CLARKE, D. L.

- 1970 *Beaker pottery of Great Britain and Ireland*. Cambridge University Press, 2 vols.

- 1972 "A provisional model of an Iron Age society and its settlement system". In D. L. Clarke ed., *Models in archaeology*, Methuen, London.

COLES, J. M.

- 1971 "The early settlement of Scotland: excavations at Morton, Fife", *Proceedings of the Prehistoric Society*, 38, pp. 284-366.

- 1973 *Archaeology by experiment*. Hutchinson, London.

COLES, J. M., F. A. HIBBERT and B. J. ORME

- 1973 "Prehistoric roads and tracks in Somerset: 3. The Sweet track", *Proceedings of the Prehistoric Society*, 39, pp. 256-93.

COOMBS, D. G.

- 1973 "Perio, the finds", *Durobrivae*, 1, pp. 25-26.

CORMACK, W.

- 1964 "The prehistoric site at Beckton, Lockerbie", *Transactions of the Dumfries and Galloway Natural History and Antiquarian Society*, 41, pp. 111-15.

CRABTREE, D. E

- 1972 *An introduction to flintworking*, Idaho State University, Museum Occasional Papers, no. 28. Pocatello, Idaho.

DARBY, H. C.

- 1940 *The Medieval Fenland*, 1st ed. 1940 (reprinted 1974). David and Charles, London.

DIMBLEBY, G. W.

- 1967 *Plants and archaeology*. John Baker, London.

ENGELBRECHT, H. T.

- 1916 "Views on the origins of cultivated plants", *A. C. Tevin Euphytica*, 22. Wageningen.

FLEMING, A.

- 1971 "Territorial patterns in Bronze Age Wessex", *Proceedings of the Prehistoric Society*, 37, pp. 138-66.

FOX, C.

- 1923 *The archaeology of the Cambridge region*. Cambridge University Press.

FRASER, F. C. and J. E. KING

- 1954 "Faunal remains". In J. G. D. Clark, *Excavations at Star Carr*, Cambridge University Press, pp. 70-95.

GODWIN, H.

- 1941 "Studies of the post-glacial history of British vegetation: parts III and IV", *Philosophical Transactions of the Royal Society, London, B*, 230, pp. 233-303.

GODWIN, H. and M. H. CLIFFORD

- 1938 "Studies of the post-glacial history of British vegetation: parts I and II", *Philosophical Transactions of the Royal Society, London, B*, 229, pp. 323-406.

GODWIN, H. and VISHNU-MITRE

- 1975 "Studies of the post-glacial history of British vegetation XVI: Flandrian deposits of the Fenland Margin, at Holme Fen and Whittlesey Mere, Hunts", *Philosophical Transactions of the Royal Society, London, B*, 270, pp. 561-604.

GODWIN, H. and E. H. WILLIS

- 1961 "Cambridge University natural radiocarbon measurements III", *Radiocarbon*, 3, pp. 60-76.

GREEN, H. S.

- 1974 "Bronze Age radiocarbon dates from Milton Keynes", *Milton Keynes Journal*, no. 3, pp. 12-13.

GRIGSON, C.

- 1965 "Measurements of bones, horncores, antlers and teeth". In Smith 1965, pp. 145-67.

HALLAM, S. J.

- 1970 "Settlement round the Wash". In Phillips 1970, 22-88.

HARCOURT, R. A.

- 1971 "Animal bones from Durrington Walls". In Wainwright and Longworth 1971, pp. 338-46.

HAWKES, C. F. C.

- 1935 "A Middle-Late Bronze Age date for the occupation site Playden near Rye", *Antiquaries Journal*, 15, pp. 467-71.

HILLAM, J.

- 1976 "The dating of Cullyhanna Hunting Lodge", *Irish Archeological Research Forum*, 3(i), pp. 17-20.

HODGES, H.

- 1958 "A hunting camp at Cullyhanna Lough near Newton Hamilton, County Armagh", *Ulster Journal of Archaeology*, 21, pp. 7-13.

HOLDEN, E. W. and R. J. BRADLEY

- 1975 "A Late Neolithic site at Rackham", *Sussex Archaeological Collections*, 113, pp. 84-103.

HORTON, A., R. D. LAKE, G. BISSON and B. C. COPPACK

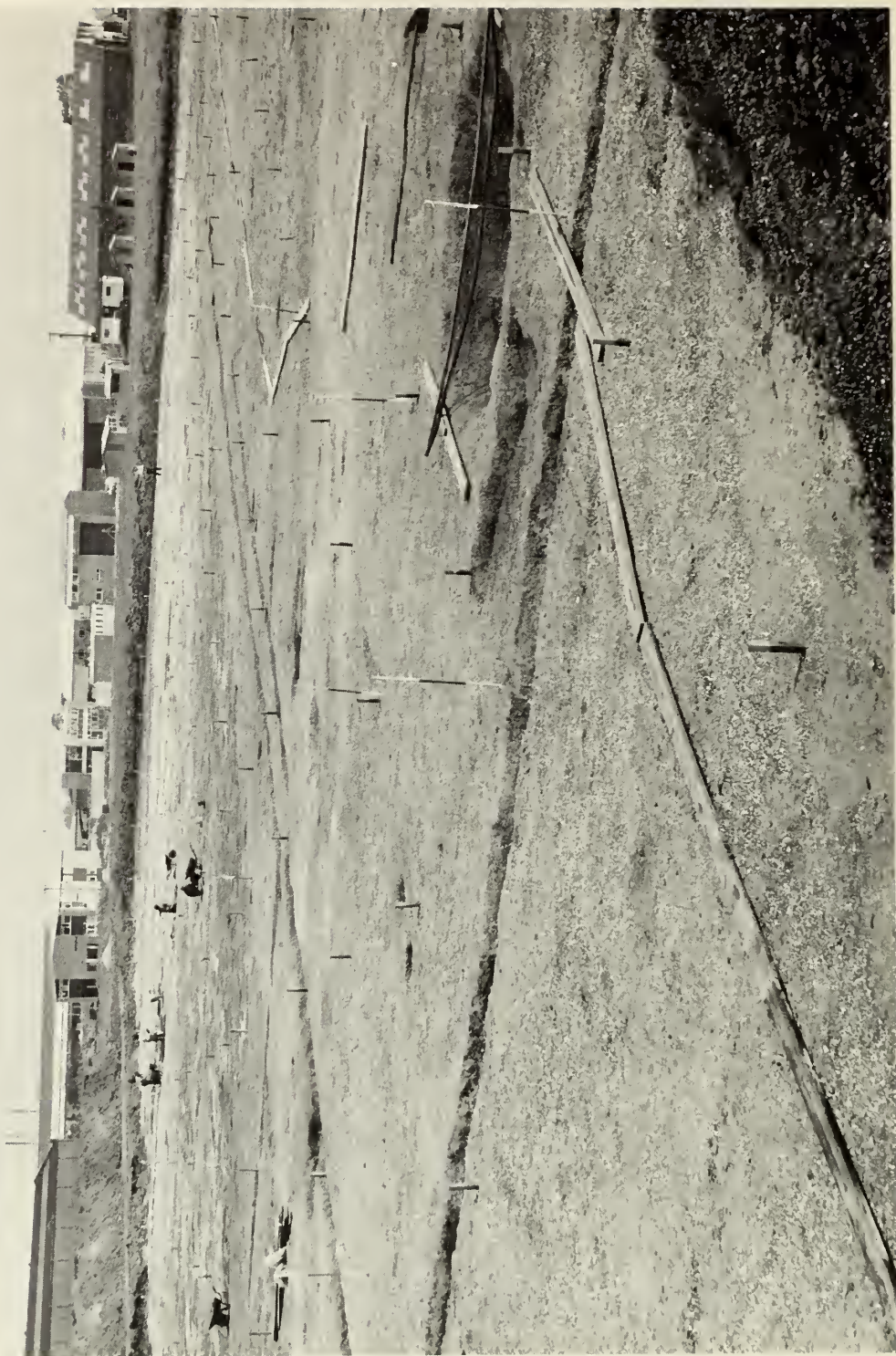
- 1974 *The geology of Peterborough*, Report of the Institute of Geological Sciences, no. 73/12. London.

JEWELL, P. A.

- 1963 "Cattle from British archaeological sites". In A. E. Mourant and F. E. Zeuner eds., *Man and cattle*, Royal Anthropological Institute Occasional Paper 18, pp. 80-91.

- LANTING, J. N. and J. D. VAN DER WAALS
1972 "British Beakers as seen from the Continent", *Helinium*, 12, pp. 20–46.
- LEEDS, E. T.
1922 "Further discoveries of the Neolithic and Bronze Ages at Peterborough", *The Antiquaries Journal*, 2, pp. 220–37.
- LOMAS, J.
1962 "A Bronze Age site at Parwich", *Derbyshire Archaeological Journal*, 82, pp. 91–99.
- LONGWORTH, I. H.
1961 "The origins and development of the Primary Series in the Collared Urn tradition in England and Wales", *Proceedings of the Prehistoric Society*, 27, pp. 263–306.
1971 "The Grooved Ware site at Lion Point, Clacton". In G. de G. Sieveking ed., *Prehistoric and Roman Studies*. The British Museum, London.
- MAHANY, C. M.
1969 "Fengate", *Current Archaeology*, 17, pp. 156–57.
- MANBY, T. G.
1974 *Grooved Ware sites in the north of England*, British Archaeological Reports, 9. Oxford.
- ORDNANCE SURVEY
1967 *Ordnance survey map of southern Britain in the Iron Age*. Ordnance Survey, Chessington, Surrey.
- PETERSEN, F.
1972 "Traditions of multiple burial in later Neolithic and Early Bronze Age England", *Archaeological Journal*, 129, pp. 22–55.
- PHILLIPS, C. W.
1970 *The Fenland in Roman times*, Research Series no. 5. Royal Geographical Society, London.
- PIGGOTT, C. M.
1938 "A Middle Bronze Age barrow and Deverel-Rimbury urnfield at Latch Farm, Christchurch, Hampshire", *Proceedings of the Prehistoric Society*, 4, pp. 169–87.
- PRYOR, F. M. M.
1974a *Excavation at Fengate, Peterborough, England: the first report*, Archaeology Monograph 3. Royal Ontario Museum, Toronto.
1974b *Earthmoving on open archaeological sites*, Nene Valley Archaeological Handbook no. 1. Nene Valley Research Committee, Peterborough.
1974c "Two Bronze Age burials near Pilsgate, Lincolnshire", *Proceedings of the Cambridge Antiquarian Society*, 68, pp. 1–12.
1974d "Fengate", *Current Archaeology*, 46, pp. 332–38.
1976 "Fen-edge land management in the Bronze Age: an interim report on excavations at Fengate, Peterborough 1971–74". In C. B. Burgess and R. Miket eds. *Settlement and economy in the third and second millennia B.C.* British Archaeological Reports, 33. Oxford.
- PYDDOKE, E.
1961 *Stratification for the archaeologist*. Phoenix House, London.
- R.C.H.M.
1970 *Sheilings and bastles*, Royal Commission on Historical Monuments (England). London.
- REYNOLDS, P. J.
1974 "Experimental Iron Age storage pits: an interim report", *Proceedings of the Prehistoric Society*, 40, pp. 118–31.
- RHATZ, P. and A. M. APSIMON
1962 "Excavations at Shearplace Hill, Sydling St. Nicholas, Dorset, England", *Proceedings of the Prehistoric Society*, 28, pp. 289–328.
- RITCHIE, A.
1970 "Palisaded sites in northern Britain: their contexts and affinities", *Scottish Archaeological Forum*, 2, pp. 48–67.
- SILVER, I. A.
1963 "The ageing of domestic animals". In D. R. Brothwell and E. S. Higgs *Science in Archaeology*, 1st ed., pp. 250–68. Thames and Hudson, London.
- SKERTCHLY, S. B. J.
1877 "The geology of the Fenland", *Mem. Geological Survey of Great Britain*.

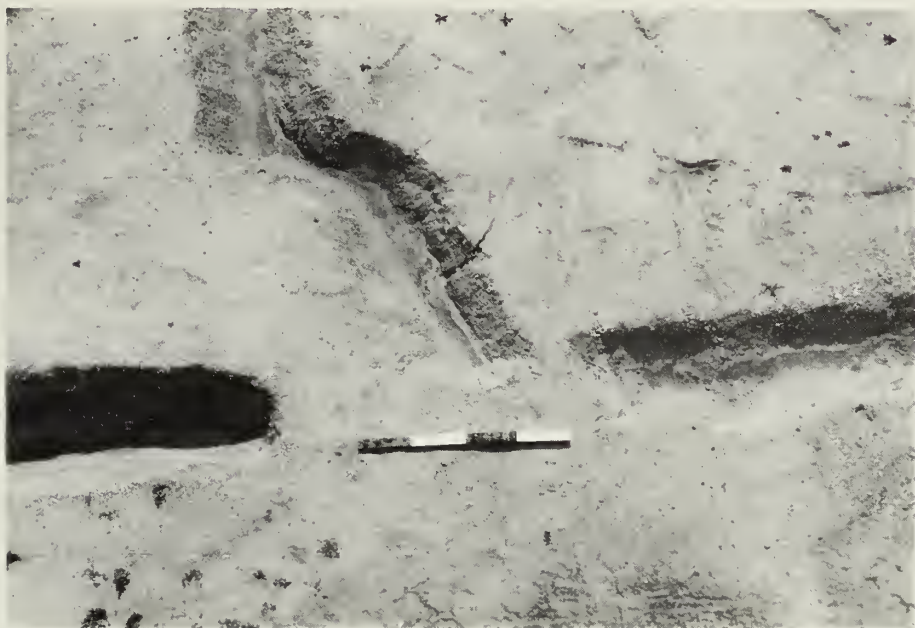
- SMITH, I. F.
 1956 *The decorative art of Neolithic ceramics in south east England and its relations*, unpub. Ph.D. thesis, Institute of Archaeology, London.
 1965 *Windmill Hill and Avebury: excavations by Alexander Keiller 1925-1939*. Oxford University Press.
- SPETH, J. D.
 1972 "Mechanical basis of percussion flaking", *American Antiquity*, 37, pp. 34-60.
- TAYLOR, C. C.
 1969 *Peterborough New Town, a survey of the antiquities in the areas of development*, pt. 1. Royal Commission on Historical Monuments, London.
- THIRSK, J.
 1953 *Fenland farming in the sixteenth century*, Dept. of English Local History Occasional Papers, no. 3. Leicester University.
- TRINGHAM, R., G. COOPER, B. VOYTEK and A. WHITMAN
 1974 "Experimentation in the formation of edge damage: a new approach to lithic analysis", *Journal of Field Archaeology*, 1, pp. 171-96.
- WAINWRIGHT, G. J.
 1972 "The excavation of a Neolithic settlement at Broome Heath, Ditchingham, Norfolk", *Proceedings of the Prehistoric Society*, 38, pp. 1-97.
- WAINWRIGHT, G. J. and I. H. LONGWORTH
 1971 *Durrington Walls: excavations 1966-1968*, Society of Antiquaries Research Report no. 29. London.
- WALKER, D.
 1970 "Direction and rate in some British post-glacial hydroseres". In D. Walker and R. G. West eds., *Studies in the Vegetational History of the British Isles*, Cambridge University Press.
- WHITING, J. M. W. and B. AYRES
 1968 "Inferences from the shape of dwellings". In K. C. Chang 1968, pp. 117-33.
- WILLIS, E. H.
 1961 "Marine transgression sequences in the English Fenlands", *Annals of the New York Academy of Sciences*, 95, pp. 368-76.



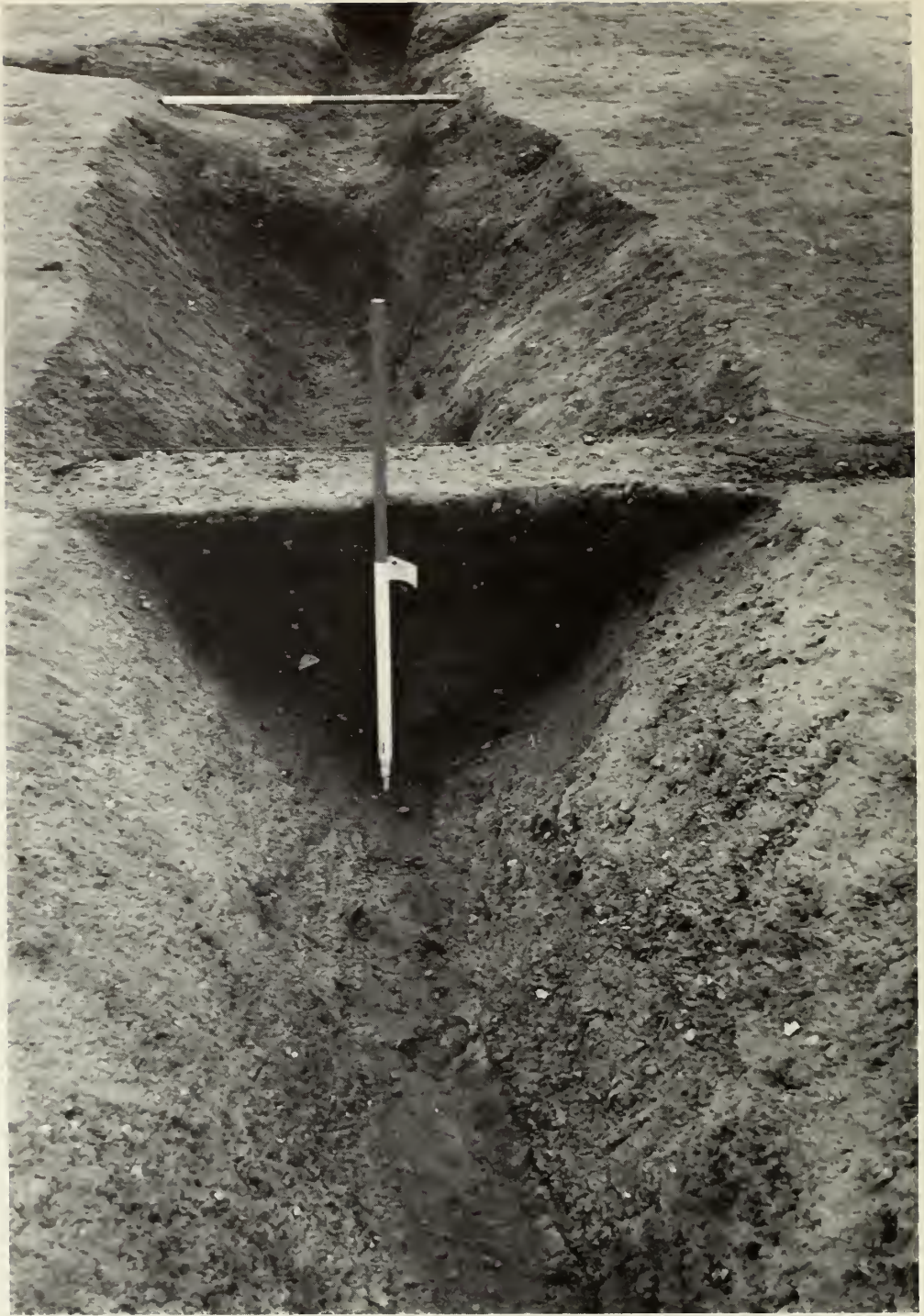
Pl. 1 Storey's Bar Road subsite, Area I, 1973 excavations: general view of the site, looking north. Note the well B3 in the right foreground. (Scale in 0.50 m divisions.)



Pl. 2 Storey's Bar Road subsite, Area I, the well B3: close-up of wood *in situ*, within layer 5. (Scale in centimetres.)



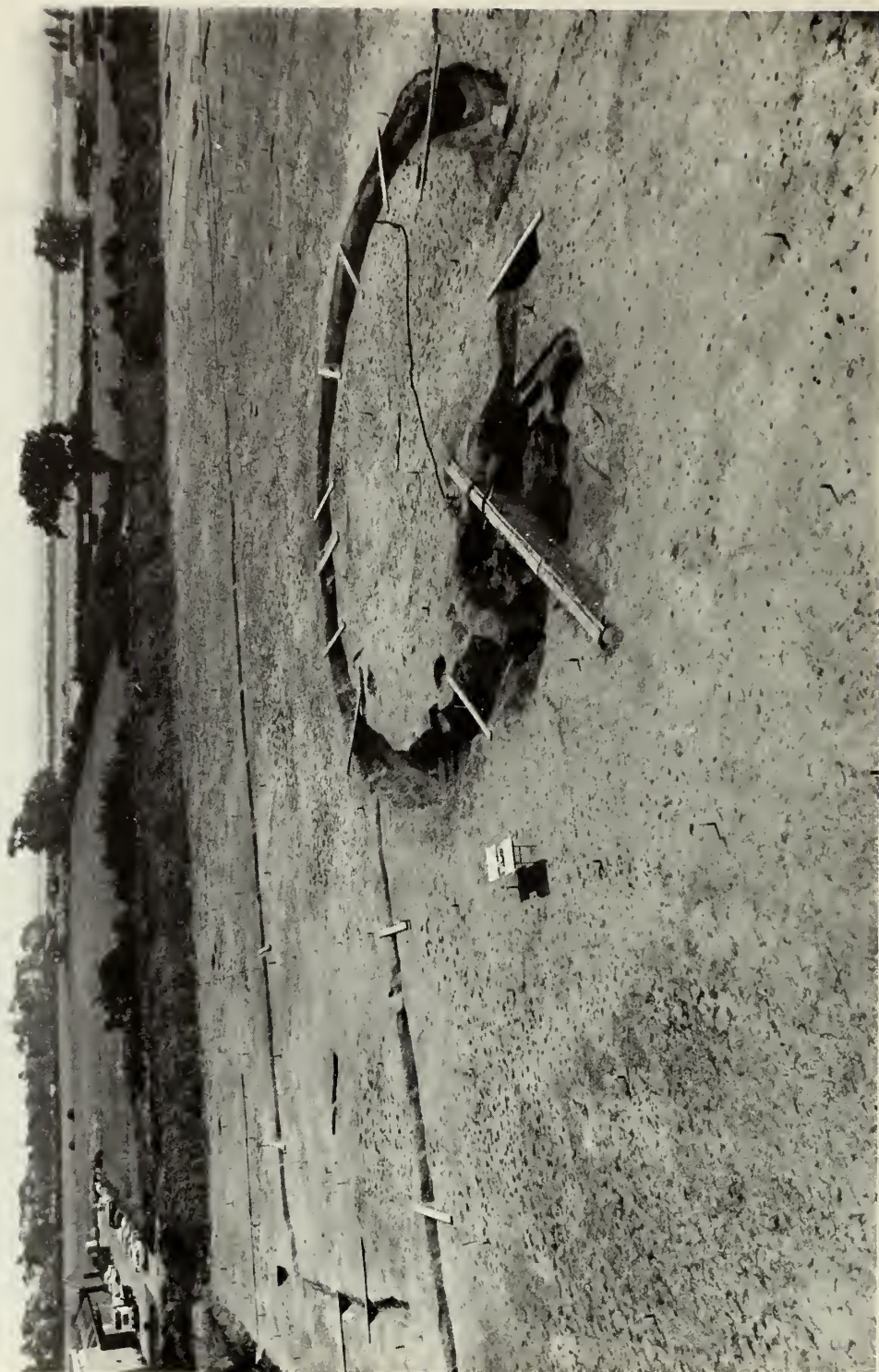
Pl. 3 Storey's Bar Road subsite, Area I, vertical view of three-way gap between ditches R21 (centre), R2 (left), and R4 (right). (Scale in 0.50 m divisions.)



Pl. 4 Storey's Bar Road subsite, Area I, view southwest along ditch W24 (Fig. 6). Note the ditch's sudden decrease in size immediately in front of the distant scale; the balk of section 37 (Fig. 10) is in the foreground. (Scale in 0.50 m divisions.)



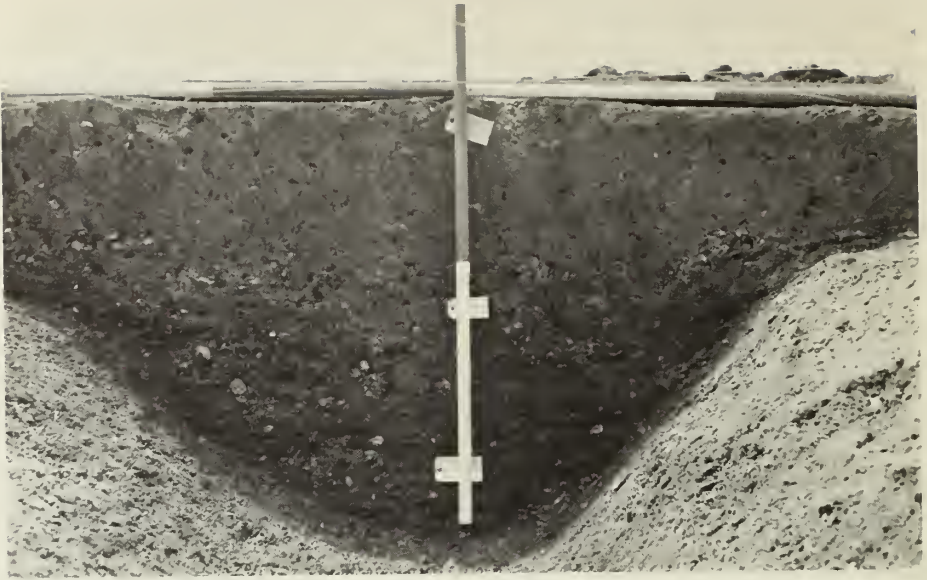
Pl. 5 Storey's Bar Road subsite, Area I, view northeast along the driveway and associated features of Division 1. Note the corner entranceway in the foreground. (Scale in 0.50 m divisions.)



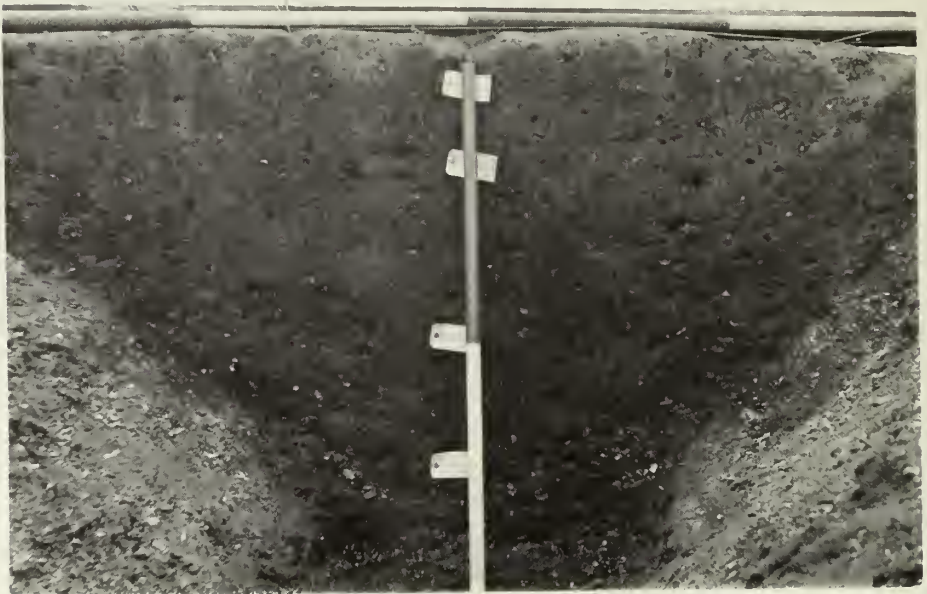
Pl. 6 Storey's Bar Road subsite, Area I, general view, looking southeast, of the northerly part of the 1973 excavations. (Scale in 0.50 m divisions.)



Pl. 7 Storey's Bar Road subsite, Area I, general view of the ring-ditch and large pit W17 during excavation.



Pl. 8 Storey's Bar Road subsite, Area I, the ring-ditch: section 7 (for location see Fig. 21). (Scales in 0.50 m divisions.)



Pl. 9 Storey's Bar Road subsite, Area I, the ring-ditch: section 9 (for location see Fig. 21). (Scales in 0.50 m divisions.)



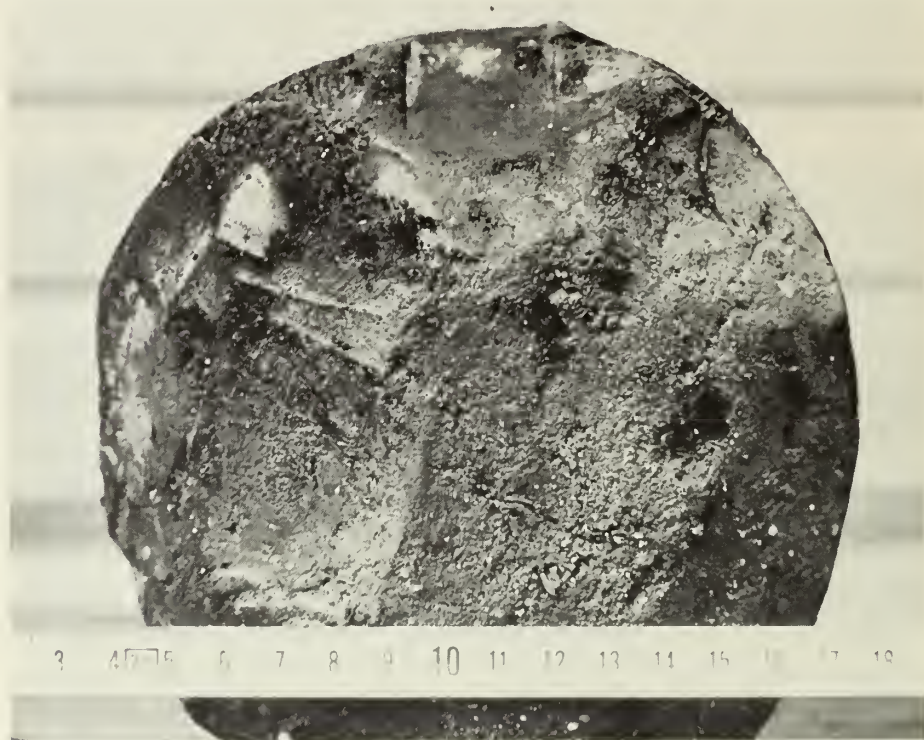
Pl. 10 Storey's Bar Road subsite, Area I, the ring-ditch: grave 1 (for location see Fig. 25 and 34).



Pl. 11 Storey's Bar Road subsite, Area I, large pit W17: axed wood (oak) from layer 5.



Pl. 12 Storey's Bar Road subsite, Area I, large pit W17: the alder log (?) ladder from layer 5 (see also Fig. 27). (Scale in centimetres.)



Pl. 13 Storey's Bar Road subsite, Area I, large pit W17: close-up of axe-marks on the bottom end of the alder log (?) ladder from layer 5 (this end is to the right in Pl. 12). (Scale in centimetres.)



Pl. 14 Techniques: $\frac{1}{4}$ -inch mesh dry shaker sieve in use, 1974 season.



Pl. 15 Techniques: extending the north part of the Storey's Bar Road subsite, Area I, 1974 season. The A soil horizon has been removed and the two machines are shown lowering the B horizon. Note the five-foot ditch-cleaning blade on the nearest machine. The linear feature to the left is ditch R2 of Division 1.

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